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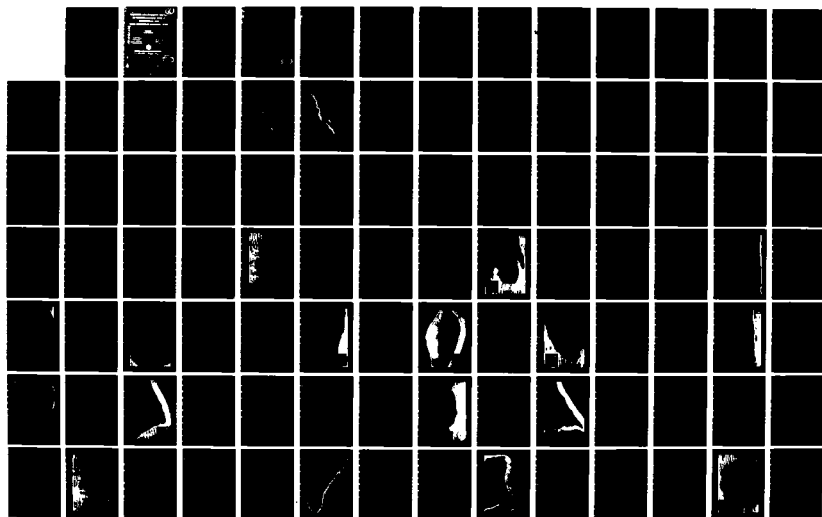
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P M EMERSON ET AL. JUL 83 DACW25-82-C-0068

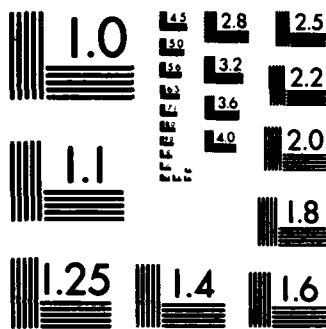
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| <p>Twenty-seven prehistoric archaeological sites were resurveyed and nine of these were tested to assess site type, cultural affiliation, current condition, and data potential. Cultural materials included over 4,000 lithic and ceramic artifacts ranging from the Early Archaic through the Late Woodland and Oneota periods. Geomorphological studies resulted in the formulation of generalized land form models which clarify relationships between geomorphic features and site distributions..</p> | | |

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**RESURVEY AND INTENSIVE TESTING
OF ARCHAEOLOGICAL SITES
AT SAYLORVILLE LAKE
POLK AND DALLAS COUNTIES, IOWA**

**TECHNICAL REPORT
VOLUME I: SITE SURVEY**

Prepared Under the Supervision of
Patricia M. Emerson, Principal Investigator
With the Assistance of
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P. O. Box 3224
Mankato, Minnesota 56001

July 1983

Submitted to the
U.S. Army Corps of Engineers
Rock Island District
Contract No. DACW25-82-C-0068

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ABSTRACT

This report presents the results of an archaeological research project conducted by Impact Services, Inc., under contract with the United States Army Corps of Engineers, Rock Island District (Contract No. DACW25-82-C-0068). The contract initially called for the relocation and testing of twenty-seven recorded archaeological sites on the periphery of Saylorville Lake, a flood-control reservoir on the central Des Moines River in Polk and Dallas Counties, Iowa. A subsequent modification to the contract was generated on the basis of initial survey results, which called for additional testing of nine of the original 27 sites, and resurvey of one other site that had not been included in the original Scope of Work. This work was done due to a pending increase in lake level (pursuant to an agreement between the Corps of Engineers and the Iowa Water Resources Council) which would partially or totally inundate the subject sites.

The objectives of the project were twofold. Since most of the subject sites had been defined only on the basis of surface manifestations, initial testing was intended to provide data which would allow for accurate assessment of site location, type, cultural affiliation and current condition. Additional testing at selected sites was then directed towards a more complete evaluation of the research potential of those sites.

An examination of the geomorphology of Saylorville Lake was also conducted as part of this project. This resulted in the formulation of a generalized model of landforms in the project area, which provided information relevant to investigation of the relationship between geomorphic position and site-location distribution. It also aided in an evaluation of the effects of wave action and periodic inundation on archaeological sites.

Cultural materials recovered during field investigations included over 4,000 lithic and ceramic artifacts - many diagnostic of cultural affiliation - as well as some early historic items and a quantity of organic material. Analysis of the recovered data addressed several topics: the specifics of site description, a consideration of the effects of past, present and possible future disruptive forces (erosion, public access, construction, etc.), and also more general topics such as settlement patterning, tool technology and an assessment of approaches and procedures suitable to archaeological research in reservoir areas. Evaluation of the data obtained during the course of this project resulted in the formulation of a number of specific and general recommendations for future actions by the Corps of Engineers in the management and preservation of the cultural resources of the area.

EXECUTIVE SUMMARY

The research that is presented in this report was performed under the terms of U. S. Army Corps of Engineers Contract No. DACW25-82-C-0068 and its subsequent modifications. That contract was generated due to discussions conducted between the Corps of Engineers and the Iowa Water Resources Council regarding an increase in the conservation-pool level at Saylorville Lake, Polk and Dallas Counties, Iowa. Such an increase was requested by the State of Iowa in order to provide greater water flow to waste treatment plants in the Greater Des Moines area.

During the planning and construction phases of the Saylorville Lake Project, a number of cultural resource surveys and testing projects had been conducted in compliance with Federal cultural resource management legislation and associated regulations. These projects resulted in the identification of a large body of historic and prehistoric resources (over 400 individual sites). As a means of effecting proper management of this large set of sites, the Corps of Engineers, after consultation with the Office of the State Archaeologist and the State Historic Preservation Office, established a priority-ranking system. Under this system, each site was assigned a priority level based upon several criteria, including research potential and probability of immediate damage or destruction due to construction activities. These rankings were then used to determine how much further research would be appropriate at each site.

The majority of the sites that were dealt with under the present contract (24 out of 28) had been defined during reconnaissance survey and shoreline monitoring only on the basis of surface manifestations, i.e. the presence of cultural materials. They were assigned relatively low priority rankings, and thus had not been tested further. When a pool-level increase became a probability, it was determined that these sites were very likely to be disturbed by the higher water levels, and therefore required additional research to fully evaluate their potential for yielding significant archaeological data.

The objective of this project, therefore, was to gather enough information about each of the subject sites to facilitate decisions regarding their future treatment. Shortly after the initial contract was awarded, the State of Iowa and the Corps of Engineers reached a formal agreement calling for an increase in the conservation-pool level at Saylorville Lake from 833' NGVD to 836' in the summer and 838' in the winter. This increase was scheduled to go into effect during the summer or fall of 1983. Time thus became a crucial factor in the completion of this project. After evaluation of the initial survey results, the decision was made to proceed with additional testing at ten sites which seemed to have the most research potential, and which were

in greatest danger of degradation once the conservation-pool level rose.

The second phase of this project, conducted under the terms of several contract modifications, thus emphasized the recovery of subsurface archaeological data, an evaluation of the probable effects of the pool increase on each site, and an examination of landforms and soils at each site (this work was conducted by a consulting geomorphologist). The results of fieldwork were then analyzed in order to formulate a set of general and site-specific recommendations for mitigative actions. As discussed in the body of this report, the mitigative options available to the Corps of Engineers are limited in this situation. Since the pool-level increase is certain, avoidance of damage by modification of planned activities is not possible. Efforts to protect the sites from damage by artificial means could be considered, but would undoubtedly require extensive effort, with less than assured success. The only feasible approach, therefore, is to concentrate on recovery of as much scientific data as possible from these sites, before the pool increase goes into effect.

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FOREWORD

This report on the Saylorville Resurvey and Testing Project is divided into five volumes. Volume I is the technical report on the survey phase of the project. It contains background information on the project area, discussions of field and laboratory methods, results and evaluations of the twenty-seven subject sites. Volume II is the technical report on the intensive testing which was done as the second phase of the project. The appendices to the first two volumes are found in Volumes III and IV. Volume III contains public information: artifact inventory, Scope of Work and Technical Proposal, vitae, review correspondence and radiocarbon-dating results. Volume IV contains the confidential documentation: site forms and other locational information, and time and personnel logs. Volume V is the non-technical (popular) report.

A number of people contributed to the creation of this report. The geomorphological analysis and soils descriptions were compiled and written by Harlan R. Finney. Dr. Finney also generated the landform maps found in the back of Volume I. Wanda A. Watson compiled the artifact inventory, assisted with data analysis, wrote the popular report and performed a number of other essential functions. Thor Olmanson created the individual site maps and other figures, drew the artifact sketches in Appendix I, and worked on many other analytical tasks. Joel D. Irish was responsible for photography in the field and the lab, performed the edgewear analysis and drafted a portion of the popular report. Pamela Rudolph assisted with proofreading, lithic analysis and report production.

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Many people participated in the various phases of this project, all of whom deserve my thanks for their contributions to its successful completion. Roy Eichhorn, late of the Corps of Engineers-Rock Island District, was diligent in his efforts to smooth out the bureaucratic peaks and valleys we encountered, and in his constant concern for the proper treatment of the archaeological record at Saylorville Lake. I also greatly appreciate the efforts made by Chip Smith to maintain continuity when he took over Mr. Eichhorn's duties at the Corps. Dr. David Gradwohl and Nancy Osborn of Iowa State University were gracious in accommodating our requests for access to the data they compiled during their work at Saylorville Lake, and Mary Ann McBride of the State Historic Preservation Office provided a good deal of valuable information. All of the personnel at Saylorville Lake were more than cooperative, especially Jim Oshe and Mark Scherer, who were always ready to provide information and assistance.

My thanks certainly go to all the people who worked in the field (often under less than pleasant conditions) and in the lab: Ron Affolter, Karen Anderson, Jeff Branger, Chuck Broste, Scott Burns, Paul Carns, Charisse Fargo, Dan Friedrichs, Barb Heieie, Julie Johnson, Kate Kachel, Kristy Kahnke, Jody MacArthur, Lezlee Oakley, Dan Parsons, Robert Parsons, Jon Paulson, Barb Pettit, Leann Rudenick, Pam Rudolph, Marcy Shea, Beth Simmons, Rich Sladek, Dave Stokes, Jamie Swanson, and Dee Washa. I am especially grateful to Jon Muellerleile and Thor Olmanson (and Mel) for enduring to the bitter - and cold - end.

I wish to express my gratitude particularly to the following individuals:

- to Bud Finney, for his expertise and his patience in putting up with my sometimes erratic schedule;

- to Kathy Roetzel, for her suggestions, comments, and criticisms, and her continual willingness to help me grapple with numerous logistic and administrative details;

- to Dr. Richard Strachan, for his many consultations with project personnel on both theoretical and methodological problems (despite his occasional insistence that things weren't going as badly as they actually were);

- to Joel Irish, for his work as official project photographer and his contributions to the report;

- to Dave Radford, for his work in the field and for providing considerable stimulus to our off-duty activities;

- to Karen Gill-Gerbig and Ken Wedding, for taking the time to help me deal with a very tight schedule;

- to Pam Rudolph, for her work on data analysis and her help in putting this report together;

- to Bob Douglas, for allowing us access to various resources

at Gustavas Adolphus College;

to Thor Olmanson, for his artistic talents and attitudinal virtues;

to Wanda Watson, for diligence and concern which went beyond the call of duty, as well for as her efforts to maintain morale;

and, finally, to my relatives, friends, and colleagues, for patiently enduring my 8-month preoccupation with Saylorville Lake, to the occasional exclusion of the real world.

P.M.E.

Mankato, Minnesota

SECTION I. INTRODUCTION

This report presents the results of an archaeological research project conducted by Impact Services, Inc. under contract with the U. S. Army Corps of Engineers, Rock Island District (Contract No. DACW25-82-C-0068). The contract and its eventual modifications called for the relocation and survey of 28 recorded archaeological sites, and intensive testing of 9 of those sites. The subject sites are all located on the shore of Saylorville Lake in Polk and Dallas Counties, Iowa (see Figure 1).

Fieldwork for this project was conducted between August and December of 1982. Patricia M. Emerson served as Principal Investigator; Wanda A. Watson was Field Supervisor and assisted in the preparation of this report. Dr. Harlan R. Finney acted as consultant on geomorphology. Additional personnel involved in the project included Kathleen A. Roetzel and Dr. Richard A. Strachan, who served as consultants on field methods and data analysis.

The first volume of this report will present the necessary background information to the project, and the results of the survey of 27 sites at Saylorville Lake. Volume II contains the results of further testing done at 10 of those sites, and Volumes III and IV consist of additional documentation, including artifact catalog, maps and site forms.

In the following pages, a description of the project area will be presented, along with specific information on each of the sites surveyed. An effort will be made to analyze the factors (natural and cultural) which have affected these sites, and to predict the extent to which they will be affected in the future. Finally, a set of general and site-specific recommendations for further research and mitigative actions will be presented.

DESCRIPTION OF PROJECT AREA

Saylorville Lake came into existence in 1977 when waters in the Des Moines River Valley were impounded by the construction of Saylorville Dam, approximately 7 miles upstream from the city of Des Moines. The lake thus created extends upstream for a distance of 17 miles to a point near the city of Madrid. In its lower reaches, the floodplain of the Des Moines River is relatively broad, and so has resulted in a lake somewhat more than a mile wide. As one moves northwest up the river channel, the floodplain narrows so that at its furthest point upstream, Saylorville Lake is little more than 1,000' wide (see Figure 2).

In terms of physiography, the river flows through a terminal

Figure 1. General Location of Saylorville Lake

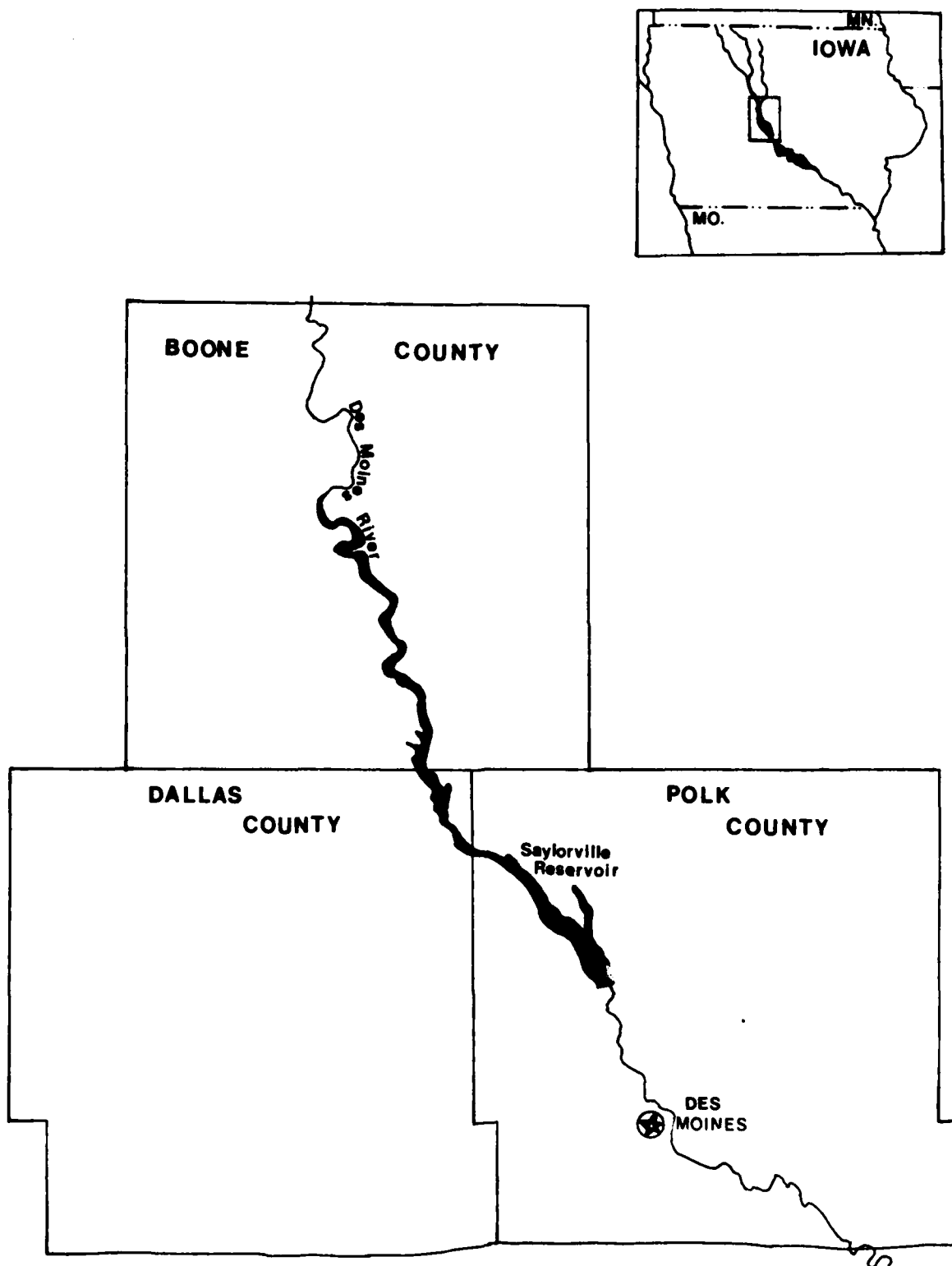
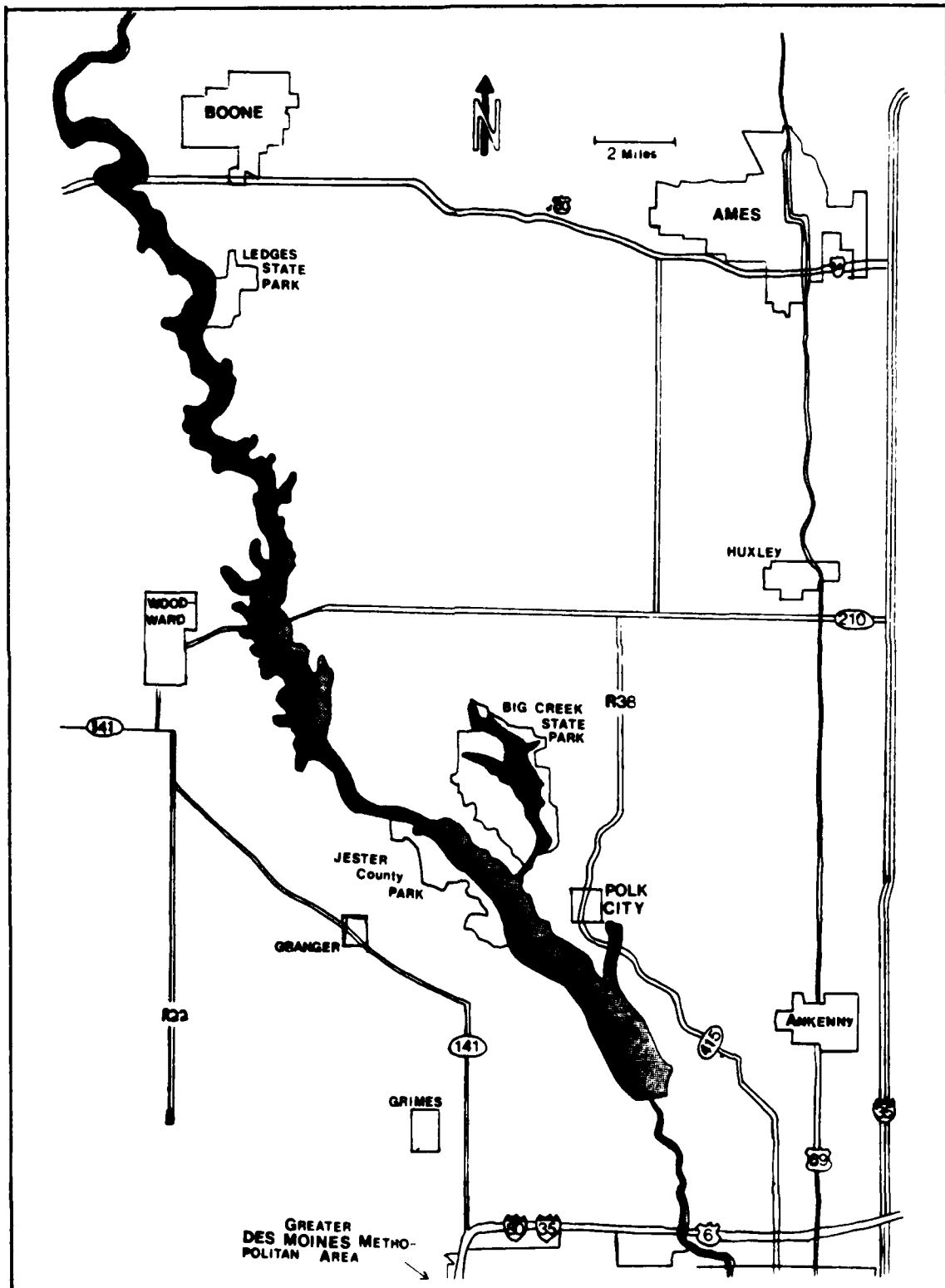


Figure 2. Saylorville Lake



moraine deposited by the retreat of the Cary advance of the Wisconsin glaciation. It is estimated that this retreat occurred some 14,000 years ago, at which time a thick layer of glacial till was laid down over the previously-deposited Kansan tills (Ruhe 1969:61). Thus, the topography of the area is typical of relatively young landscapes, with a drainage system not yet mature. Relief is moderate, with many rolling hills. The average variation in elevation from river valley to uplands is not more than 100 feet.

The major vegetational trends in the Central Des Moines River Valley since deglaciation can be roughly outlined on the basis of research related to Benn & Bettis' work (1981) in the Downstream Corridor. (Since the division of the valley into Upstream and Downstream Corridors is a strictly artificial one, it can be assumed that general vegetational patterns apparent in one would extend into the other.) At the close of the Pleistocene Period, around 10,500 years B.P. (before present), a hardwood forest and possibly some relic conifer stands covered the valley floor (Walker 1966, Benn & Bettis 1981). Around 8,000 B.P., a shift in valley vegetation from a closed deciduous forest to a parkland with prairie vegetation occurred. Benn & Bettis suggest that prairie vegetation was dominant by 5,000 B.P. At approximately 4,000 B.P., a resurgence in the growth of trees occurred due to increased precipitation, and oak forests became established on the steep, east-facing valley walls (Benn & Bettis 1981:17). The prairie, although reduced in size, still survived in many areas of the valley.

The large meanders the Des Moines River occupied from 1,000 B.P. into the historic period became the new floodplain for the valley, and a floodplain forest developed in this region (Ibid.) Thus, by the early 1800's, vegetation patterns similar to present conditions were established in the valley. At the time of settlement by Europeans, the vegetation of Polk and Dallas Counties consisted of prairie grasses and deciduous hardwoods. The upland areas were covered primarily by grasses, with forest cover appearing in the stream valleys and floodplains. This pattern is reflected in the distribution of local soils, as shown in Figure 3 (map in back cover pocket). The agricultural activities of the past 150 years have certainly altered the original terrain of the area by eliminating most stands of upland prairie vegetation, thus increasing the rate of topsoil erosion from the uplands and the corresponding deposition of alluviums in the lower elevations. Thus, at many points along the shore of Saylorville Lake, one finds pre-settlement surfaces buried by considerable accumulations of alluvium (Osborn & Gradwohl 1982:Appendix C-3).

Saylorville Lake was created by the Corps of Engineers to serve as a flood-control device by allowing regulation of the rate of flow into the downstream portions of the Des Moines River. When the dam went into operation in 1977, it resulted in the inundation of lands surrounding the river channel up to an elevation of 833' National Geodetic Vertical Datum (NGVD). (This

is the current conservation-pool level.) During periods of heavy inflow from upstream drainages, the lake level is allowed to rise to a maximum elevation of 890' NGVD. An agreement negotiated with the Corps of Engineers by the Iowa Water Resources Council in the spring of 1982 calls for an increase in conservation-pool level to 836' in summer and 838' in winter. This increase is scheduled to go into effect in September, 1983.

PROJECT OBJECTIVES

During the planning and construction phases of the Saylorville Dam Project, a number of archaeological surveys were conducted to identify cultural resources in the project area (see pp. 7-8). Since the lake was created, monitoring of shoreline has resulted in the location of a number of additional sites. Altogether, more than 400 prehistoric and historic sites have been identified within the area managed by the Corps of Engineers.

The proposed increase in pool level will affect a number of recorded sites on the lakeshore. Many of these sites were tested during previous projects and sufficient information is available to allow for determinations of their significance and research potential. Some sites, however, were defined during reconnaissance-level surveys only on the basis of surface manifestations, and have never been further scrutinized. After consultation with the Iowa State Historic Preservation Office, the Corps of Engineers compiled a list of sites which will be affected by the pool raise, and appeared to warrant further investigation. (Three of the sites chosen for resurvey have been tested in the past; however, it was felt that some additional examination was necessary in order to clarify the information available about them.) The present project was intended to provide the Corps with enough additional information to facilitate decisions regarding the management of these sites.

An additional goal of this project was an examination of the geomorphology of the lake from the dam upstream to the southern boundary of Boone County, in order to construct a generalized model of landforms in the area. (A similar analysis had already been conducted in the Downstream Corridor, between Saylorville Dam and the City of Des Moines - see Benn & Bettis 1981, Benn & Harris 1982.) This information was then to be integrated with archaeological data, as an aid to analysis and interpretation.

The information compiled about the subject sites during fieldwork was to be used for two purposes: to define site boundaries, cultural affiliation, site function and current condition, and as the basis for generating a set of site-specific recommendations to the Corps of Engineers. These recommendations would then be used in determining what additional research or mitigative actions should be undertaken before the proposed pool-level increase went into effect.

DISCUSSION OF THE SCOPE OF WORK

The Scope of Work for this project is presented in Appendix II, Volume III. As can be seen, the original Scope was modified several times during the course of the project. The following discussion is intended to review the objectives set forth in the Scope, and to assess the degree of correspondance between its intent and its effect, as written. (This discussion will focus on the first phase of the project, which was the initial site survey. A discussion of the modifications which initiated intensive site testing can be found in Volume II.)

The essential requirements of the contract in regard to fieldwork can be summarized as three general tasks:

- a) relocation of 27 recorded sites;
- b) limited testing to define site type, boundaries, cultural affiliation and current condition; and
- c) geomorphological analysis of the project area.

The stated goals of the project were, thus, essentially straightforward. However, the implications they carried in terms of theoretical and methodological considerations were somewhat more complex.

Preparing a good Scope of Work is something of a balancing act. The contractor must be given guidelines that are clear enough to allow for preparation of appropriate technical and budget proposals, but at the same time it must be recognized that there are a number of legitimate alternative approaches that may be applied to any research project. The need for such flexibility (within minimum standards) in the performance of Federal cultural resource research, particularly, has been debated and discussed by many individuals and entities in recent years.

It is obvious that the intent of this particular Scope of Work was to present a balanced view: to define as clearly as possible the work to be accomplished, without imposing extraneous restrictions on the theoretical or methodological orientation of the contractor. Given the history and nature of previous research at Saylorville Lake, that objective was reasonably well met.

The most obvious shortcoming of the Scope lies in its discussion of geomorphological analysis (Section 4.1). That discussion is, to say the least, brief, and gives virtually no indication of the desired level of detail. (This problem may be a common one, and most likely arises from a general unfamiliarity with geomorphic principles within the archaeological community. However, the importance of geomorphic analysis in archaeological research is becoming more evident every year. As the procedures and needs of the two disciplines become more mutually intelligible, it should become easier to clarify the role that geomorphology is to play in any given research situation.) In this case, considerable discussion was necessary between the Principal Investigator and the consulting geomorphologist before

appropriate procedures could be chosen.

Finally, it should be noted that the effectiveness of the Scope of Work was greatly enhanced by the continual involvement of Corps personnel in the progress of this project. The few areas of confusion or ambiguity which were encountered were resolved with a minimum of difficulty through an informal process of discussion and feedback. This procedure served the interests of all parties involved, by insuring that the work not only met the needs of the contracting agency, but also conformed to the standards of the discipline.

PREVIOUS INVESTIGATIONS

The history of archaeological research at Saylorville Lake is a long and complex story. Only a synopsis of that story is presented here; the reader is referred to the reports listed in the bibliography for more detailed information.

Prior to 1962, no systematic archaeological surveys of Polk and Dallas Counties had been done. The only recorded sites were those that had been located by early researchers such as Charles Keyes, or reported by local landowners. In 1964, Michael J. Ashworth and Marshall McKusick published a small report which was essentially a review of existing knowledge about sites in the area.

When planning for the construction of Saylorville Dam began in the mid-1960's, the Federal government became the main impetus for archaeological fieldwork aimed at systematic site location, testing and excavation. In 1966, crews from the Smithsonian Institution's River Basin Survey program did limited testing at a few known sites in the area, and recorded several new site locations. The National Park Service, through its Heritage Recreation and Conservation Service, was instrumental in setting up a program for systematic survey of the lands to be affected by the creation of Saylorville Lake and the ancillary Big Creek Sub-impoundment area. In 1967, a contract for such survey was established with Iowa State University. The purpose of the work conducted under this contract, based in part upon the results of previous research in the area, was to "test and excavate certain archaeological sites selected on the basis of salvage criteria as well as historical and scientific significance" (Osborn & Gradwohl 1981:4).

It was during the initial construction phase of the Saylorville Project that much of the existing federal legislation relating to cultural resource management went into effect. Thus, the Corps of Engineers found itself in the position of having a regulatory responsibility for inventory and assessment of cultural resources in the Saylorville Project Area. In 1973, the pace of archaeological research in the area was accelerated due to the impending construction of Saylorville Dam. Contracts were established to evaluate the archaeological resources of the

region, in compliance with such legislation as the Historic Preservation Act of 1966, the National Environmental Policy Act of 1969, Executive Order 11593 of 1971 and the Archaeological and Historic Preservation Act of 1974.

An initial contract was established between the Iowa State Historic Preservation Program and Iowa State University in 1973 to conduct intensive surface reconnaissance on the left bank of the Des Moines River, immediately upstream from the proposed dam location (Osborn & Gradwohl 1981:4). In the next 7 years, a series of contracts between USACE and ISU were established in compliance with Federal standards. These contracts were executed by ISU under the direction of David M. Gradwohl and Nancy M. Osborn. The archaeological research that was conducted under these contracts was primarily reconnaissance-level, employing surface reconnaissance as the major method of site location. This procedure was supplemented by "shovel-assisted" survey techniques when deemed necessary (Osborn & Gradwohl 1981:5).

As a group, this series of reconnaissance-level surveys resulted in the location of over 400 prehistoric and historic sites in the project area (*Ibid.*). While they were being conducted, some intensive testing and emergency salvage operations were also put into motion at specific sites thought to be in imminent danger of destruction by construction activities.

After Saylorville Dam was completed and waters were impounded in the lake, a program of shoreline monitoring was instituted to evaluate the effect of further construction activities and inundation at known archaeological sites. This program resulted in the location of a number of new sites not recorded as a result of the initial reconnaissance-level surveys.

The work conducted during the time period from 1960 to 1980 under various government programs has significantly increased the inventory of recognized cultural resources in the central Des Moines River valley. The archaeological data thus obtained provides a broad foundation for detailed analysis and reconstruction of prehistoric human behavior in this region.

GEOMORPHOLOGICAL ANALYSIS

The primary purpose of the following information is to provide an overview of the landforms and soils of the Saylorville Lake area of Dallas and Polk Counties, Iowa. The major landforms and soils of the area are described, and their distribution is shown on an accompanying map (in pocket on back cover). The relative ages of the landforms are also discussed. This information is not intended to be a substitute for the detailed studies of geomorphology and soils that are necessary to thoroughly define individual sites. Instead, it is presented in order to provide a base for comparing the general setting of several sites.

Procedures

The landform map and supporting text were developed primarily from a review of the literature. Two days were spent making initial field observations during August/September 1982, after which a draft landform model was generated. During subsequent field evaluations of specific sites, that draft was checked and some revisions were made.

Detailed soil surveys have been completed of both Polk County (McCracken et al., 1960) and Dallas County (Iowa Soil Survey Staff, in press). Those surveys, the U.S.G.S. standard 7.5-minute series topographic maps, and more detailed, 5-foot contour interval maps provided by the Corp of Engineers were the primary sources for preparation of the generalized landform and soils model. The U.S.G.S. topographic maps were the base for the maps accompanying this report.

No detailed studies of the geomorphology of the area reported here have been made. However, Benn and Bettis (1981) and Been and Harris (1982) conducted detailed geomorphological and archaeological studies of a part of the Des Moines River Valley immediately downstream from the dam of Saylorville Lake. Also, they made a comprehensive review of pertinent literature. Their work was most helpful in developing an understanding of the geomorphology of the area.

The map shows the general location of the major landforms and major groups of soils. The groups of soils are primarily distinguished one from another on the basis of the kinds of vegetation under which they formed and the kinds of material in which they formed. Readers who want more precise information on the location of the different kinds of soil and their properties and behavior are directed to the reports of the detailed soils surveys. Also, the minimum size of any given area delineated on the map is about 10 to 20 acres, depending on its shape. Thus, in some small areas, there may exist variations in landform type, soil type, or both, which could not be delineated due to scale difficulties.

General Setting

The Saylorville Lake area lies entirely within the Western Lake Section of the Central Lowlands Physiographic Province of the U.S. It is in the Des Moines Lobe Landform Region of Iowa (Prior, 1976). However, the area has a variety of landforms and surficial materials of different ages. This variety primarily results from the changes in the Des Moines River Valley after deglaciation.

The area is in the large general soil region called "Dark colored soils developed under prairie" (Aandahl, 1960). The order Mollisols is the dominant kind of soil in this region. This region has some of the most fertile and productive soils of the world, and a significant part of the corn belt is in it. However, the Saylorville Lake area has a large variety of soils because of variations in several factors that affect soil

formation: parent material, vegetation, relief, and the amount of time that those factors have had to influence soil development.

Landforms and Soils of the Area

For each landform delineated on the accompanying map, its properties are described below, and the major kinds of soil on that landform are indicated. (Refer to Figure 4 for a summary of landform and soil types.)

Floodplains (map symbol "F")

Small areas of floodplains of the Des Moines River emerge from the 833-foot lake level about 1.5 km north of the "Mile-Long Bridge", and become nearly continuous about 2.5 km east of the bridge on Iowa State Route No. 17. The floodplains from there upstream to the Boone County line are perceived to be analogous to the "low" and perhaps the "lower part of the intermediate terrace" of Benn and Bettis (1981) because no well developed soils were mapped there and all are subject to flooding.

Major soils on the floodplains of the Des Moines River as well as on the floodplains along streams entering the Des Moines River Valley are loamy, dark colored, and moderately well to poorly drained. Major soil series are Coland, Hanlon and Spillville (all Cumulic Hapludolls).

Terraces (map symbol prefix "T")

Ruhe (1965) noted three terraces above the floodplains of the Des Moines River where U.S. Highway No. 30 crosses it in Boone County. However, in the immediate project area, only two terraces above the floodplains are conspicuous.

The higher and most distinct terrace in the area (map symbol prefix "TH") is outside the modern Des Moines River Valley and might better be called an outwash plain. It begins just east of Zook Spur in Dallas County at the summit of the bluffs of the Des Moines River Valley at an elevation of slightly more than 930 feet. From there it extends southeast about 8 km where it terminates at the confluence of the valleys of Mosquito Creek and the Des Moines River. The eastern one-half of this plain is highly dissected by Mosquito Creek and its tributaries.

Map symbol "TLP" shows terraces in the valley of the Des Moines River that lie above the floodplains. The most distinct of these terraces (hereinafter called main lower terrace) has its highest part at an elevation of about 900 feet at the boundary line of Dallas and Boone Counties. The farthest-south segment of it, which is about 1 km north of the dam, has its highest part at about 860 feet. This terrace is discontinuous because of erosion by the Des Moines River and its tributaries. The longest continuous expanses of this terrace are only about 1 km in length. This terrace is most prominent in two places: (1) beginning about 1 km south of the Boone-Dallas Counties boundary and extending downstream about 2.5 km, and (2) beginning about 1 km east of the bridge on State Route 13 and extending downstream about 5 km. However, large parts of it in that latter section

Figure 4. Summary of Landform and Soil Types

| <u>Landform Type</u> | <u>Map symbol</u> |
|---|-------------------|
| Floodplains | F |
| Terraces | |
| High | |
| Soils formed mostly under forest | THF |
| Soils formed mostly under prairie | THP |
| Low (Soils formed mostly under prairie or savannah) | TLP |
| Big Creek (Soils formed mostly under prairie) | TBP |
| Slopes | |
| Footslopes and alluvial fans | VF |
| Shoulders and backslopes | |
| Soils formed mostly in glacial till | VS1 |
| Soils formed at least partly in shale | VS2 |
| Uplands | |
| Soils formed mostly under forest | |
| In glacial till | UF1 |
| In glacial outwash or eolian sediments | UF2 |
| Soils formed mostly under prairie | |
| In glacial till | UP1 |
| In glacial outwash or eolian sediments | UP2 |
| Soils formed mostly under savannah | |
| In glacial till | US1 |
| In glacial outwash or eolian sediments | US2 |
| Altered lands | X |
| Other symbols - refer to standard legend for U.S.D.I. Geological Survey 7.5 minute topographic maps. | |

have been altered (map symbol "X") by mining for sand and gravel.

A few small areas of a distinctly lower terrace are included in delineations of "TLP". The landform upon which 13PK259 lies is one such inclusion. Such inclusions may be analogous to the "intermediate terrace" of Benn and Bettis (1981). Another rather distinct terrace which lies above the floodplain is in the valley of Big Creek (map symbol "TBP"). However, most of it is north of the map boundary. Its highest elevation on the landform map is 890 feet at Polk City.

Soils formed under both prairie and forest are on the high terrace, whereas soils formed under prairie and savannah vegetation are dominant on the lower terraces. The Big Creek terrace has soils that formed under prairie. Important prairie soils on all terraces ("THP" - high terrace, "TLP" - low terraces, "TBP" - Big Creek terrace) are the well drained Ridgeport and Wadena series (Typic Hapludolls), the somewhat poorly drained Cylinder series (Aquic Hapludolls) and the poorly drained Biscay series (Typic Haplaquolls). The most important soil formed under forest on the high terrace (map symbol "THF") is the well drained Lamont (Typic Hapludalfs). Most of these soils are loamy in the upper part and sandy in the lower part.

Valley Slopes (map symbol prefix "V")

Valley slopes of the Des Moines River Valley and its tributary valleys are a distinct landform in the project area. The difference in elevation between the base of their footslopes and the top of their shoulders commonly ranges from 50 to 90 feet. Their slopes typically have gradients of 20 to 50 percent. The drainageways leading into the larger tributary streams have a distinct dendritic pattern. However, most tributary streams enter the Des Moines River Valley at nearly right angles. Thus, they are in a parallel pattern in regard to that valley.

Two components of this landform are delineated on the map. One component (map symbols "VS1" and "VS2") consist primarily of the steep shoulders and backslopes. However, narrow floodplains, footslopes, and alluvial fans are common inclusions. The other component (map symbol "VF") consists of nearly level to sloping footslopes and alluvial fans.

Two general groups of soils are on the shoulder and backslope component. One group (map symbol "VS1") consists of soils formed in glacial till. The major soil in this group is the well drained Hayden series (Typic Hapludalfs) which developed mostly under forest. Other soils are the well drained Lester series (Mollic Hapludalfs) which developed mostly under forest. Other soils are the well drained Lester series (Mollic Hapludalfs) which developed mostly under savannah, and the well drained Storden series (Typic Udorthent) which developed mostly under prairie. All three of those soils are loamy throughout. The other group (map symbol "VS2"), which is very minor in extent, consists of soils that formed at least partly in shale. Major soils are the well drained Gosport (Typic Dystrochrepts)

and Vanmeter (Typic Eutrochrepts) series. These two soils are loamy in the upper part and clayey in the lower part.

Major soils on the footslope and alluvial fan component ("VF") are the moderately well drained Terril (Cumulic Hapludolls) and Moingona (Typic Argiudolls) series. These soils are loamy throughout.

Uplands (map symbol prefix "U")

The uplands of the area are more typical of the major fabric of the Des Moines Lobe Landform Region than any other landform in the Saylorville Lake area. However, the uplands have more drainageways and more sloping land than is typical of that region. Glacial till is by far the dominant surficial material (map symbols "UF1", "UP1", "US1") in this landform. However, surficial materials consisting of local outwash (ice contact deposits) and eolian sediments are in this landform (map symbols "UF2", "UP2", "US2").

Six groups of soils are in this landform. Soils that formed mostly under forest are dominant in areas adjacent to the valley slopes. Of the soils that formed in glacial till (map symbol "UF1") the well drained Hayden series (Typic Hapludalfs) is dominant. The well drained Lamont series (Typic Hapludalfs) is typical of the soils that formed in eolian or outwash sediments. Both of these soils are loamy throughout, but the Hayden series has more clay.

Soils that formed mostly under prairie are dominant in parts of the area farthest from the valley slopes. Of the soils that formed in glacial till (map symbol "UP1"), the well drained Clarion series (Typic Hapludolls), the somewhat poorly drained Nicollet series (Aquic Hapludolls), and the poorly drained Webster series (Typic Haplaquolls) are dominant. These soils are loamy throughout. A few small areas of soils that formed at least partly in eolian or outwash sediments (map symbol "UP2") are delineated. The well drained Farrar series (Typic Hapludolls) is representative of this group.

Soils that formed mostly under savannah are dominant in areas between those that formed in forest and those in prairie. Of the soils that formed in glacial till (map symbol "US1") the well drained Lester series (Mollic Hapludalfs) and the somewhat poorly drained Le Sueur series (Aquic Argiudolls) are dominant. These soils are loamy throughout. A few small areas of soils that formed at least partly in eolian or outwash sediments (map symbol "US2") are delineated. The well drained Crocker series (Mollic Hapludalfs) is typical of these soils.

Altered Lands (map symbol "X")

Altered lands comprise a significant part of the area. They primarily comprise areas where soil and underlying sediments were removed and where they were placed as fill. Gravel pits are also an important component of this landform type.

RESERVOIR PROCESSES AND ARCHAEOLOGICAL DATA

One of the objectives of this project, as stated above, was to evaluate the "current condition" of the 28 subject sites, with the explicit understanding that they have undergone disruption by a number of natural and human forces since Saylorville Lake was created in 1977. All archaeologists deal with sites that are "disturbed" to a greater or lesser degree, and adjustments in field and analytical methods are routinely made to compensate for the particular circumstances of each case. In most instances, such adjustments are taken as implicit, and require little discussion. However, the manner and magnitude of disturbance in reservoir areas are such that they require rather drastic adjustments, which warrant a detailed explanation.

Because most major reservoirs are under the jurisdiction of Federal agencies, government-sponsored research has provided quite a few opportunities in recent years for the study of archaeological sites in reservoir areas. Very early on, researchers and managers became aware that sites were being degraded and destroyed by reservoir processes, but no one really understood the mechanisms that were operating. This situation engendered a modification of the goals of archaeological research in reservoir areas: those goals were expanded to include the evaluation of the physical processes which were affecting every class of archaeological data.

A number of reservoir studies have been published to date, some of which deal with reservoir processes in general, and some of which are concerned with site- or region-specific data. One of the most thorough publications currently available is the final report of the National Reservoir Inundation Study, which was sponsored by the National Park Service. Over the course of several years, the NPS sponsored a series of studies at different reservoirs (some done as part of contract projects), which investigated the effects of reservoir processes on every level of archaeological data. Some of the studies were directed towards evaluation of long-term effects, and will not be completed for a number of years.

In the following paragraphs, a generalized discussion of reservoir processes (based primarily on information contained in the Final Report of the National Reservoir Inundation Project) will be presented. The manner in which this information relates to the results of the present project will then be discussed.

Description of Reservoir Processes

The physical processes which arise from the creation and operation of a reservoir can be categorized as being of three types: 1) mechanical, 2) biochemical, and 3) human and other. Each category represents a particular set of actions or conditions (summarized in Figure 5), not all of which will necessarily pertain in any given reservoir. The likelihood of any one process being in operation at a particular place and time is dependent on a number of factors, including the configuration

Figure 5. Summary of Reservoir Processes and Zones of Impact

| <u>Type of Process</u> | <u>Specific Actions or Conditions</u> |
|------------------------|--|
| Mechanical: | Wind erosion Wave erosion Current action Saturation of soils Deposition/siltation Mechanical abrasion Freeze-thaw action Wet/dry cycling from periodic inundation |
| Biochemical: | Hydrologic processes affecting chemical properties Density, current formation Water temperatures Dissolved oxygen content pH alteration Oxidation-reduction potential Microbial decomposition Concentration of chemical compounds |
| Human & Other: | Construction & maintenance activities Recreational use Deliberate vandalism Grazing animals Invader plant species |
| <hr/> | |
| <u>Zone of Impact</u> | <u>Operation of Processes</u> |
| Deep-water: | Mechanical impacts intermittent - most likely to occur during impoundment and draw-down Biochemical impacts continuous during total inundation Human and other impacts negligible |
| Near-shore: | Mechanical impacts continuous Biochemical impacts variable - increase in magnitude during periodic inundation Human & other impacts likely, especially due to construction activities & vandalism |
| Above-shore: | Mechanical impacts primarily erosive, especially due to bank slumpage Biochemical impacts variable - increase in magnitude during periodic inundation Human & other impacts likely, especially due to construction activities & vandalism |

of the reservoir and its shoreline, orientation to prevailing winds, susceptibility of soils to erosion, time of year, and the extent and nature of recreational activities in the reservoir area, among other things.

The magnitude of the impact that any or all of these processes has at a specific site is also dependent on the location of that site within the reservoir area. The reservoir, as a whole, can be divided into three "zones of impact", which reflect the differential operation of reservoir processes: the deep-water zone, the shoreline or near-shore zone, and the above-shore zone. The probable extent of impact in each zone by each type of process is summarized at the bottom of Figure 5.

Effects of Reservoir Processes on Archaeological Data

Because archaeological data exist within a matrix of natural formations and materials, the reservoir processes which alter those formations and materials must also alter the cultural data they contain. The characteristics of such alteration are dependent, first, on the variable operation of reservoir processes, and second, on the particular class of data being examined. For analytical purposes, a three-level hierarchy for archaeological data can be defined.

The levels of archaeological data and probable effects on each level by reservoir processes are summarized in Figure 6. The first level contains large-scale data: all the information relating to the regional environmental data base is included at this macrolevel. Disruption of this class of data occurs primarily because of the wholesale alteration of landscapes which is a part of reservoir construction and operation. The second level is the site area itself, within which nonmaterial or organizational aspects of cultural systems are reflected in spatial relationships among artifacts and other material remains. Mechanical, biochemical and human impacts on the site area can destroy information at this level in a number of ways. One of the most significant impacts occurs from mechanical forces such as wind/wave erosion and current action, especially for sites in the near-shore zone. The third level is the small-scale data base, which includes individual artifacts, features, and the analytical properties of cultural materials.

Reservoir Processes at Saylorville Lake

Relating a general understanding of reservoir processes to the present and probable future condition of archaeological resources at Saylorville Lake is certainly an objective of this report. Unfortunately, a complete assessment of each type of impact on each class of archaeological data requires an intensity of analysis far beyond what was possible, given the operative constraints on time and funding. It is possible, however, to make a few educated estimates of the extent to which the archaeological record at Saylorville is being disrupted, based on information gathered during the course of fieldwork and data analysis.

Figure 6. Summary of Archaeological Data Loss Due to Reservoir Processes

| <u>Level</u> | <u>Categories of Data Lost or Damaged</u> |
|---|--|
| Regional (Large-scale data) | Ecological zones Vegetational communities Physiographic features Geomorphic features (soil types, etc.) Regional site distribution patterns Large-scale cultural features: trade routes, trails, exploitation zones |
| Individual Site Area (Medium-scale data) | Site contextual data Stratigraphic relationships Spatial relationships Artifact surface distributions Partial or complete loss of vertical and/or horizontal site component(s) Destruction of features (house structures, etc.) Biochemical alteration of soils & features |
| Cultural materials (Small-scale data) | Differential redistribution of surface materials Loss of artifactual materials through erosion, displacement, vandalism Loss of behavioral data (lithic wear patterns altered, etc.) Slight modification of soil colors, stains, textures Some dating methods affected Alteration or elimination of analytical attributes: ceramics - erosion of surfaces; color, hardness, porosity altered bone - shrinkage, cracking; loss of enamel from teeth floral & faunal materials - loss or degradation |

Regional level: For the purposes of this discussion, "regional" refers to Saylorville Lake itself, and the adjacent lands which have been affected by the existence of the lake. On this level, the operation of mechanical and human impacts are readily observable, primarily in the form of large-scale modifications to the landscape. In addition to the obvious, deliberate changes (gravel pits, borrow areas, etc.), there have been more subtle alterations of the terrain, as illustrated in Figure 7. This is a generalized comparison of pre- and post-lake topography along selected portions of lakeshore. The dotted line represents the current 833' contour (the shoreline); the solid lines represent the 835', 850' and 870' contours as they existed prior to the creation of the lake. As can be seen, mechanical processes have had two major effects: an overall "widening" of the basin in which the lake lies (due in large part to frequent fluctuations of the water level), and a general "smoothing" of the shoreline resulting from alternate removal and accrual of sediments in various areas.

The changes in regional topography reflected in this figure have occurred since 1977, during which time there have been three major high-water episodes and a number of minor fluctuations in lake level. Because the lake is intended to serve as a flood-control reservoir as well as a recreational area, the processes which created the current shoreline will undoubtedly continue to operate in the future. Thus, the probability of attaining a plateau of stability is minimal. Changes in other regional environmental characteristics can also be observed. These changes have occurred - and are occurring - on a macrolevel (long-term changes in biome composition) as well as a microlevel (short-term changes in vegetation resulting from periodic inundation.)

Site-specific level: As the process of relocating and resurveying the subject sites proceeded, it became possible to define a set of specific conditions, extant at one or more sites, which have resulted from the action of various reservoir processes. These conditions are defined as follows:

a) partial inundation - some portion of the original site area is now below the normal pool elevation.

b) loss of vertical component - the depth of the cultural horizon has been reduced to some extent, with corresponding loss of cultural data.

c) loss of horizontal component - the areal extent of the site has been reduced to some extent, with corresponding loss of cultural data.

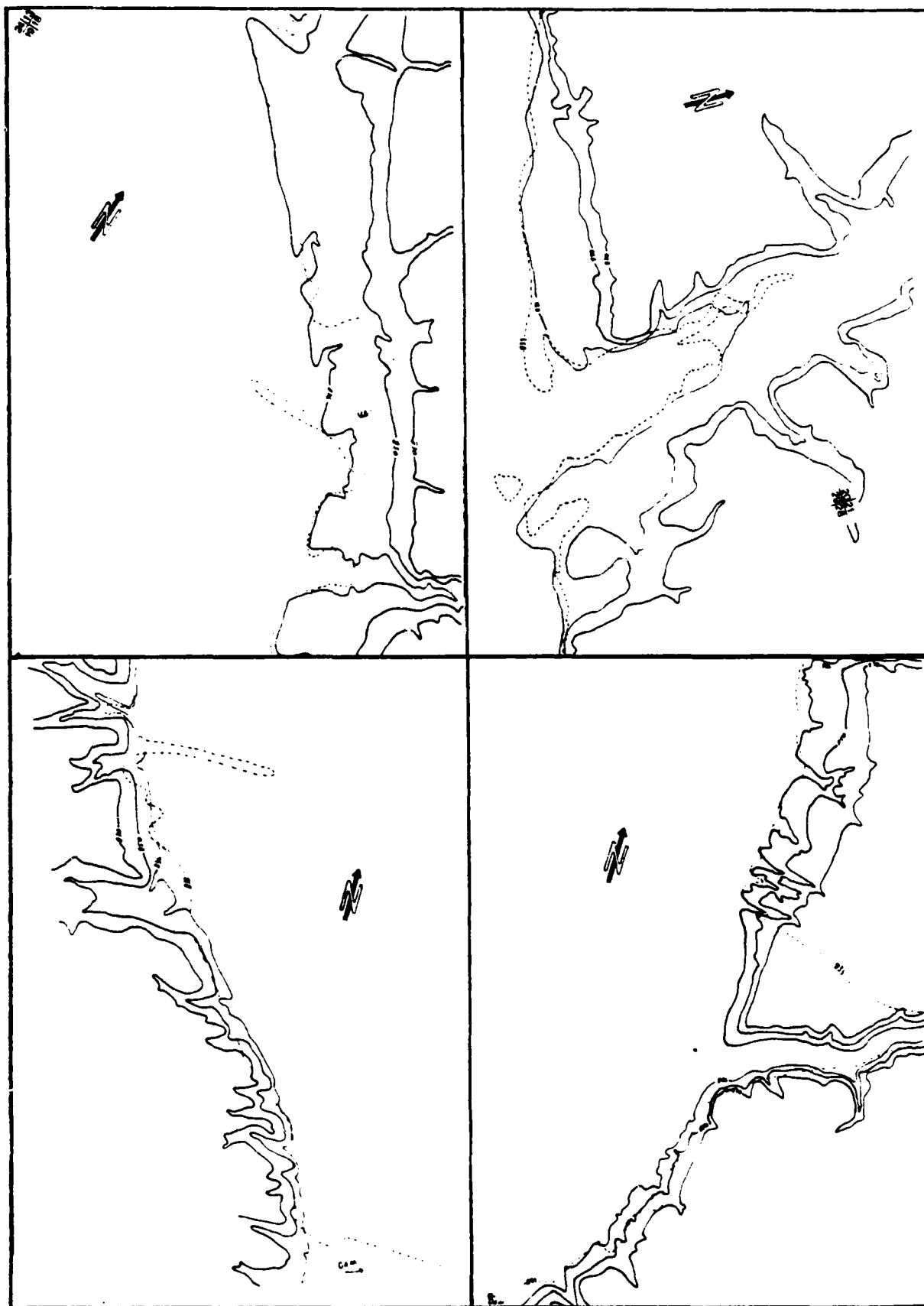
d) aggradation - sediments have been deposited over part or all of the site area.

e) redeposition - part or all of the soil matrix and associated cultural materials have been removed or displaced by water action, although they may remain within the site area.

f) selective removal of cultural materials - the site has been vandalized, which has skewed the range and quantity of recoverable cultural materials.

The current condition of each of the subject sites can be

Figure 7. Recent Landscape Alteration at Saylorville Lake



defined essentially as some combination of these conditions, as discussed in Section IV.

Overall, conditions b), c) and e) seem to be the most prevalent among the 28 sites examined during this project. It is not overstating the case to say that every one of the subject sites has been reduced in size in at least one dimension. Determining the exact extent of loss at each site, however, is difficult for two reasons. First, while it is relatively easy to measure the amount of bank slumpage that has occurred along terrace edges, for instance, by comparing old and new topographic maps, loss of topsoil at many sites must be measured in centimeters rather than meters. Losses of this magnitude, while great enough to make a critical difference in terms of cultural data, are not great enough to be discernable on ordinary topographic maps; it would require specialized mapping efforts to detect them. Second, since site areas were rather broadly defined to begin with, it is not possible to determine how much of the missing land was originally part of any actual site area.

Condition e) perhaps had the greatest implications in terms of the objectives of this project. The power of natural forces was clearly evidenced in the field by the huge trees and other materials that marked the level to which floodwaters had risen during the summer (at one site, an abandoned vehicle was found which had been turned upside down by rising waters). Obviously, artifacts on the surface of a site are similarly affected. The redeposition of cultural materials by rising and falling waters obscures original patterns of distribution, rendering them quite unreliable as reflections of subsurface concentrations. It is also possible for artifacts to be carried away from one site area and redeposited on another, especially where sites are spatially proximal. Nevertheless, care was taken during fieldwork to record general distributions of surface artifacts, as a check on their reliability vis-a-vis subsurface concentrations. This procedure made it possible to draw two general conclusions about surface reconnaissance as an effective survey technique in reservoir areas.

The effect of water action on surface materials does not consist solely in the creation of "deflated" deposits: artifacts are moved horizontally as well as vertically. While there is undoubtedly some variation in the extent of movement due to differing sizes, densities and buoyancies of different artifact classes, flooding at Saylorville Lake has been of sufficient intensity to make it likely that all types of artifacts have been affected to some extent. Thus, within a given site area, the main purpose served by surface reconnaissance is to provide a sample of the types of materials to be found in the site as a whole. That sample cannot necessarily be considered representative of the whole set of cultural data at the site, however, since several factors operate which tend to skew the distribution of material available to be recovered. Reduction of the total quantity of artifacts originally contained within a site area by natural forces is certainly a probability. Based on past

observational and experimental studies, it can be stated that this reduction is most probably not proportional among all types of artifacts. Certain items are more likely to be removed by erosional forces than others, just as certain items are more likely to be removed by vandals. The smallest and lightest artifacts such as microflakeage and small sherds are more likely to be entirely removed from a site area than are larger, denser pieces. Also, condition f) above must be presumed to obtain at most sites accessible to the public (on several occasions, crew members encountered people apparently intending to do some "selective removal" of cultural materials from sites close to public-use areas). This results in probable loss of materials most useful for determination of temporal and cultural affiliation: projectile points and ceramic vessel rims. There also exists the possibility that materials found on surface within a particular site area may actually have been carried in from another site. This applies especially to materials found immediately along the waterline, which may have been washed up from inundated sites offshore. Any attempt to define cultural affiliation, site type or function on the basis of surface materials, therefore, must be approached with considerable caution.

While surface reconnaissance is not the most efficient technique for examination of intra-site characteristics, it does have some utility for determination of overall site boundaries. This was illustrated by the results of testing at 13PK314. This site was initially defined, based on surface materials, as being approximately 175 meters long and averaging no more than 40 meters in width. When it was resurveyed, a definite pattern of surface distribution was observed: lithic and ceramic artifacts were found in profusion in rather constricted areas at the far north and far south ends of the alluvial fan upon which the site is located, and were very sparse between these two areas. Subsurface testing confirmed that this one "site" actually consists of two separate occupation areas; no evidence of human activity was recovered from the area between the two concentrations.

Artifactual level: The cultural materials recovered from the subject sites have been affected by reservoir processes in two directions. First, the sheer quantity of material which remains within site boundaries has been reduced, as discussed above. Second, the physical attributes of some of the artifacts which do remain have been altered. This problem is most apparent in regard to ceramics, which demonstrate a variety of degraded conditions ranging from algae growth and deposition of chemical precipitates to erosion of both exterior and interior surfaces. (A further discussion of this problem can be found in Section II.)

This discussion is by no means intended to be an exhaustive examination of the operation of reservoir processes at Saylorville Lake. It should be obvious to the reader at this point that those processes operate in a most complex manner. A

complete evaluation of their effect on the archaeological resources of Saylorville Lake would require much effort and many years of observation and experimentation - a worthwhile endeavor, to be sure, but one not within the scope of this project. It is hoped, however, that the preceding pages have presented a clear, if generalized, explanation of conditions which were encountered in the field and in the lab, and thus has served to clarify the manner in which this project was conducted.

SECTION II. SITE SURVEY PROCEDURES AND RESULTS

RESEARCH PROCEDURES

In the following pages, a detailed explanation of how the goals of this project were attained will be presented. Specific methods used in the field and during data analysis will be described, and various theoretical and methodological concerns relevant to the results of our research will be discussed.

Implementation of Project Objectives

As discussed in the preceding section, the objectives of this project were twofold: to relocate the twenty-seven subject sites in the field, and to test them in order to obtain basic descriptive data. The first step in planning fieldwork was thus an examination of the existing documentary evidence relating to the subject sites. The majority of that evidence is recorded on state site forms, copies of which were obtained from the Corps of Engineers, the State Historic Preservation Office and the Office of the State Archaeologist. Additional information was obtained from Ashworth and McKusick (1964), Brown (1966), a contract report done for the National Park Service (Gradwohl 1975), and a series of reports published by the Iowa State University Archaeological Laboratory, as part of the contract work done by that institution for the Corps of Engineers (Gradwohl & Osborn 1973a, 1973b, 1974, 1975a, 1975b, 1976; Osborn & Gradwohl 1981, 1982). The Corps also provided a base map which indicated generalized site locations (some of which conflicted slightly with the locational data on site forms and in reports). The information obtained from these various sources was synthesized in order to produce a master map of site locations.

The next step, relocation of the subject sites in the field, was slightly complicated by two factors. First, some of the official site records contained conflicting information, as when the legal description did not correspond to the recorded elevation of the site. Second, changes in the shoreline due to erosion made it difficult in some cases to correlate original site maps with existing terrain. These complications were resolved by a process of repeated estimation and ground-checking of probable site locations, and also through the use of information about construction activities and landscape modification provided by personnel at the Saylorville Lake Office.

After a particular site location was determined, a combination of surface and subsurface testing methods were applied, as appropriate for the conditions extant in each area. (The particulars of these methods are explained below.) The testing process was intended to recover data which would make it possible to define site boundaries, cultural affiliation, site function, and current condition. Therefore, the intensity and extent of testing varied from site to site, based in large part

on decisions made in the field.

The geomorphological analysis of the project area required by the Scope of Work was conducted by Dr. Harlan Finney while the archaeological fieldwork was in progress. The procedures and results of this process are presented on pp. 8-13.

Because of the impending increase in the conservation-pool level at Saylorville Lake, time was an essential consideration in planning fieldwork. However, the schedule for completion originally set forth in the contract turned out to be an unattainable goal. Revision of that schedule became necessary before fieldwork ever began.

Heavy precipitation in the area drained by the Upper and Central Des Moines River during the spring and early summer of 1982 made it necessary for the Corps of Engineers to hold unusually large quantities of water in Saylorville Lake during July and August. At the time the contract for site survey was signed, the lake level was at 855' NGVD, or 22' above the normal conservation-pool level. Since most of the subject sites are located very close to the normal waterline, it was impossible at that time to reach them, let alone conduct any testing. Access to the sites at higher elevations was severely restricted by the inundation of walkable beachlines and inlets, and by the presence of large amounts of drift materials along the temporary shoreline.

These conditions made it necessary to revise the proposed date for the start of field operations. After some discussion with Corps personnel, it was determined that fieldwork could begin when the lake level reached approximately 838', at which time some of the subject sites would be accessible for testing. Because the Corps of Engineers maintains regulatory restrictions on the rate at which water can be released from Saylorville Lake, that level was not reached until the latter part of August. Fieldwork was therefore not completed until considerably later in the fall than originally planned.

When the initial survey of the twenty-seven subject sites was completed, the recovered data were presented to the Corps of Engineers. After consultation with SHPO, 9 sites which seemed to hold some further research potential were chosen for additional testing. One other site which had not been part of the original Scope of Work was also designated for resurvey (13PK152). This second phase of the project is discussed in Volume II of this report.

Field Methods

The research design for this project emphasized a flexible approach to site testing, utilizing a combination of systematic and random sampling procedures. These procedures were applied to individual sites in such a manner as to maximize the probability of recovering certain classes of data, appropriate to meeting the project objectives set forth in the Scope of Work. To accomplish

this, three major field procedures were utilized: 1) ground surface reconnaissance; 2) shovel/auger testing; and 3) cutbank planing.

Ground Surface Reconnaissance

Ground surface reconnaissance was the primary means of confirming the relocation of each actual site area. Because of the high lake level during the first half of the summer, most of the shoreline was devoid of live vegetation, although portions of some site areas were obscured by the presence of layers of drift material deposited by receding waters. This "defoliation" effect greatly facilitated the process of surface reconnaissance (even though it did serve to obscure distributional analysis, as discussed above).

Visual inspection of the ground surface was conducted at an interval no greater than 15 meters; some sites were small enough to allow for virtual "shoulder-to-shoulder" examination. As artifactual materials were collected from the surface, pinflags were used to mark each artifact location, and notes were made as to their distribution. In a few cases, surface reconnaissance was conducted in grid or transect patterns, partly as a means of assessing the efficiency of such methods at sites subject to periodic inundation (these instances are discussed in individual site descriptions).

The spatial extent of surface reconnaissance at each site was dependent on, first, the documentary evidence available about the site, and, second, the topography of the area. In most cases, surface reconnaissance was done over the entire site area as defined on state site forms. Those definitions generally encompassed an area bordered by inlets perpendicular to the lakeshore on two sides, the lake itself on another side, and a footslope parallel to the lake on the fourth side.

As site survey progressed, it became evident that surface distributions were not necessarily reflective of subsurface concentrations. The degree of correspondance between the two varied from site to site, apparently due to the influence of factors such as elevation, degree and aspect of slope, and position of each site within the reservoir area. (A more detailed discussion of the validity of surface reconnaissance in this situation can be found on pp. 18-21).

Shovel/Auger Testing

After surface reconnaissance was conducted at each site, the placement of subsurface tests was determined. That placement was dependent on several factors: topography, site size, previous testing, and, to some extent, the distribution of surface material. Each test was a minimum of 30 cm by 30 cm in size, dug in 10 cm artificial levels. All of the backdirt from each level was processed through 1/4" wire mesh screen. (In a few instances, 1/8" mesh screen was used to increase the probability of recovering microflakeage. However, most of the soils encountered were of a consistency which made this approach more

time-consuming than productive.) As artifacts were recovered, they were bagged according to location by specific pit and level. Shovel tests were dug to sterile soil, and notes were made on soil stratigraphy before backfilling.

At some sites, evidence of considerable deposition of sediments was encountered during shovel testing. When this occurred, subsurface testing was conducted using a portable soil auger rather than a shovel, since this allowed for greater depth of testing. Each auger test was 7 inches in diameter and was dug in 10 cm artificial levels. Again, all of the backdirt was processed through 1/4" wire mesh screen by level, and all artifacts recovered were bagged according to pit and level.

Cutbank Planing

A comparison of pre-lake topography with extant conditions at Saylorville Lake suggests that many site areas have been truncated along their shoreline edge by wave action and slumpage (see Figure 7). To explore this possibility, all cutbanks bordering site areas were examined by means of cutbank planing, using a trowel or small handhoe. The exposed cutbank was planed or smoothed, any artifacts that were found in the cutbank were recovered and noted as to location, and measurements of the various stratigraphic levels were noted. This process was helpful in determining if portions of the vertical components of sites were indeed missing.

Laboratory Methods

While the recovery of data in the field, as described above, is a necessary endeavor in any archaeological research project such as this one, it certainly is sufficient neither to the objectives of the project nor to the broader goals of the discipline. It must be supplemented by whatever analytical procedures may be appropriate to the project, viewed in the context of regional, methodological and theoretical concerns. The particular analyses that were performed in this case are described below in general terms; the results of those analyses are presented in Section III. (Additional analysis performed as part of the intensive testing phase of the project are discussed in Volume II of this report.)

Artifact Inventory

In the laboratory, all of the artifacts recovered during fieldwork were first cleaned in a manner suitable to the particular material. Each artifact was then assigned a unique catalog number. (The materials previously recovered from the subject sites by Iowa State University had already been catalogued according to that institution's system. Therefore, a list indicating the final number used for each site was obtained from ISU and the new materials were catalogued in sequence with that scheme.) As the artifacts were numbered, artifact inventory forms were filled out. These forms indicate site number, individual catalog number, a brief description of each artifact, the location and depth of recovery, and the date on which it was recovered.

Typological Classification

A basic part of the analysis of both lithic and ceramic materials was the assignment of type names to as many of the recovered artifacts as possible. This was done as a means of facilitating definitions of cultural and temporal affiliation for the subject sites. Since the formulation of new taxonomies was not part of this project, existing classificatory schemes were employed as referents. This classification process was facilitated through the use of ceramic and lithic analysis forms devised by Impact Services personnel. One such form was completed for each diagnostic artifact, detailing physical characteristics and including a sketch of the item. (These forms can be found in Appendix I, Artifact Inventory, following the inventory pages for each site.)

It is well understood that typologies are artificial constructs, subject to constant revision as more data become available and old data are re-examined. Thus, the classifications presented in this report are not meant to be absolutes; they are, rather, attempts to fit the new information from Saylorville Lake into existing schema. That fit may be considered more or less precise when viewed from different theoretical perspectives, and no doubt will be subject to revision in the light of future research.

Lithic Analysis

During the first phase of this project, analysis of lithic artifacts was limited to the description of individual artifacts for inventory purposes, and a brief statistical analysis of the relative proportions of different types of objects recovered during fieldwork. An explanation of the descriptive process is provided in Appendix I, and the results of the statistical analysis are discussed in Section III.

Ceramic Analysis

As discussed in Section I, ceramic artifacts are particularly susceptible to degradation when inundated. Virtually all of the prehistoric ceramic sherds recovered during this project show some evidence of such degradation. In the most extreme cases, sherds could be distinguished from the surrounding soil matrix only because they were slightly more resistant to pressure during screening. Other sherds are so eroded that no portion of either the interior or exterior surface remains intact. Some are coated with precipitated minerals which obscure surface treatment and decoration; others are covered with algae growth. (Examples of these conditions can be seen in the artifact plates in the back of volume II.) Because of the poor condition of the recovered ceramics, analysis was limited essentially to description of those artifacts in the inventory, and assignment of type names where possible.

SITE DESCRIPTIONS

The twenty-seven sites resurveyed during the first phase of this project are described in detail in the following pages. For each site, the following information is presented: general location, summary of previous research, testing procedure applied during resurvey, sketch map of the site area showing the location of subsurface tests and site boundaries, table of artifactual materials recovered, a brief discussion of the site, and an estimation of site function and cultural affiliation. (Evaluations of current condition and site-specific recommendations are not included here, but are presented in Sections IV and V.)

A few general comments should be made here, so that repetition can be avoided in the discussions of individual sites. The site maps in this section were generated from maps and aerial photographs provided by the Corps of Engineers. The aerial photographs, taken in December of 1982, were used to create site maps reflective of present topography. However, no aeriels were taken of the lake west of the Polk-Dallas County line. Thus, the site maps for 13DA9, 13DA160 and 13DA161 were taken from 5-foot contour interval maps which were based on surveys done prior to the creation of Saylorville Lake, and are not necessarily indicative of current contours.

When examining the site maps, the reader is urged to keep in mind the discussion of the effects of reservoir processes on archaeological sites which was presented on pp. 14-22. Consideration of erosional factors should help to clarify what might appear to be rather erratic distribution of subsurface tests at some sites.

If the site descriptions below are compared to the descriptions found in original survey reports and on state site forms, a number of changes will be noted. Most of these changes have to do with the process of defining site boundaries, which constituted a large part of this project. Since no subsurface testing was done when most of the subject sites were initially located, their defined boundaries reflected only the distribution of surface materials in a given area. As resurvey progressed, it became clear that, in many cases, that distribution was more reflective of natural processes than cultural processes. Thus, the original site boundaries have in some instances been drastically redefined to reflect the results of subsurface testing.

In a similar manner, the estimated site elevations listed in the original site descriptions have in most cases been somewhat modified. These modifications resulted from consideration of two factors: the lack of initial subsurface testing at most of the subject sites, and the changes in shoreline configuration that have taken place in the past 5 years (see Figure 7). Since it must be assumed that the shoreline of Saylorville Lake will

continue to change in the future, the locational and descriptive data presented herein can only be considered temporarily exact. They will undoubtedly be at least partially inaccurate after the passage of another winter and spring.

The site boundaries delineated on the individual maps were established, for the most part, on the basis of subsurface distributions. They thus represent operational boundaries - i.e. the area within which evidence of cultural activity is recoverable, given present conditions - rather than the actual behavioral boundaries of each site. Also, these boundary lines obviously define each site in two dimensions only. The depth of cultural deposits must be inferred from the results of subsurface testing. The definition of a fourth parameter - the temporal dimension - is a more complex problem, which is dealt with in greater detail in Section IV.

The general field procedures employed during site survey have already been described (pp. 23-25), so they will not be discussed in any detail in this section. Particular applications of those methods at specific sites are explained. Summary tables showing the quantity, kind and provenience of cultural materials recovered at each site are included below; more detailed discussions of artifact analyses can be found in Section III and Appendix I.

Finally, a note of caution should be added in regard to the cultural affiliations and function designations discussed below. Many of the diagnostic artifacts recovered were found during surface reconnaissance, and must therefore be considered of rather questionable provenience. However, at many sites, they are the only evidence available upon which to base temporal and functional classifications. Rather than discounting that evidence completely, a decision was made to use it in formulating descriptive hypotheses, with due recognition of their somewhat tentative nature.

13PK163

Location: on and above the floodplain of the Des Moines River, now near the eastern end of Saylorville Dam.

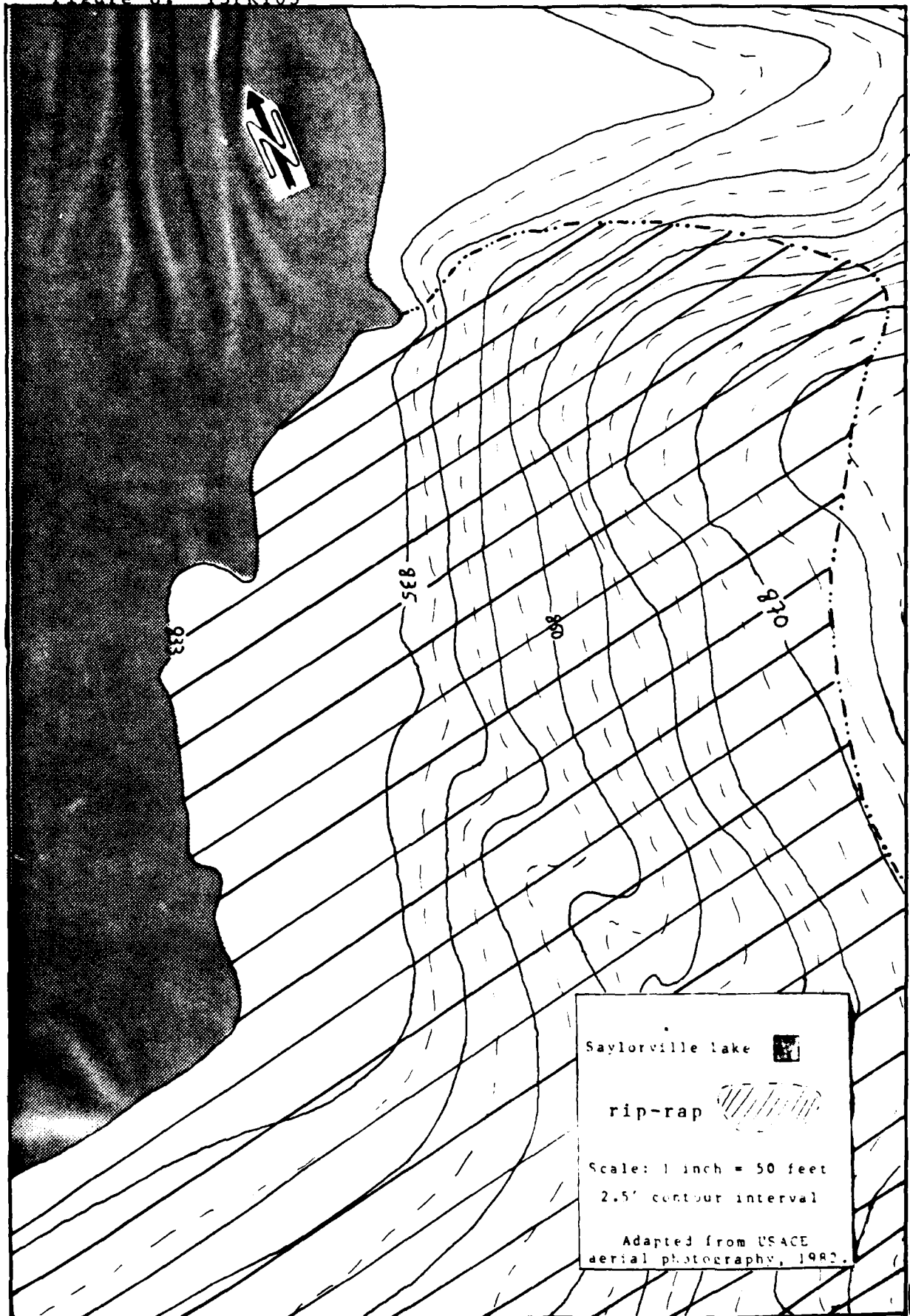
Previous Research: defined by Iowa State University personnel during reconnaissance survey; no subsurface testing done; state site form dated 9-30-73.

Testing Procedure: none - site is currently covered by rip-rap.

Material Recovered: none.

If the legal description and elevation of this site as recorded on the state site form are assumed to be correct, 13PK163 is presently underneath several tons of limestone rip-rap. That material was placed over the site in 1975, during dam construction, as a means of retarding shoreline erosion (Mark

Figure 8. 13PK163



Scherer, personal communication, 1982).

An examination of the areas adjacent to the recorded site location was made by Impact Services personnel, but no cultural materials were recovered (see Plate I-1). No testing of the site area itself was conducted, since removal of the rip-rap was not deemed a feasible approach. If any portion of this site does remain intact, it is relatively well-protected from disruption; at the same time, it is no longer accessible for research purposes.

The initial survey of 13PK163 by ISU yielded a small amount of surface material. This included a corner-notched projectile point and a number of lithic tools, but no ceramics. The projectile point indicates a Middle Woodland affiliation, and the constricted spatial distribution of surface materials and lack of ceramics suggest a limited occupation, perhaps for a specialized purpose such as hunting, rather than an established habitation. These classifications must be considered quite tentative, however, due to the paucity of the available data. (See Plate II-8).

13PK194

Location: on an upland ridge above the valley of the Des Moines River, now on the eastern shore of Saylorville Lake, just south of Commodore's Cove.

Previous Research: defined by ISU personnel during reconnaissance survey; state site forms dated 8-1-74 and 8-8-74. The site was revisited in 1975 and in 1976, at which time 12 shovel tests were done (Osborn & Gradwohl 1981: 313-321).

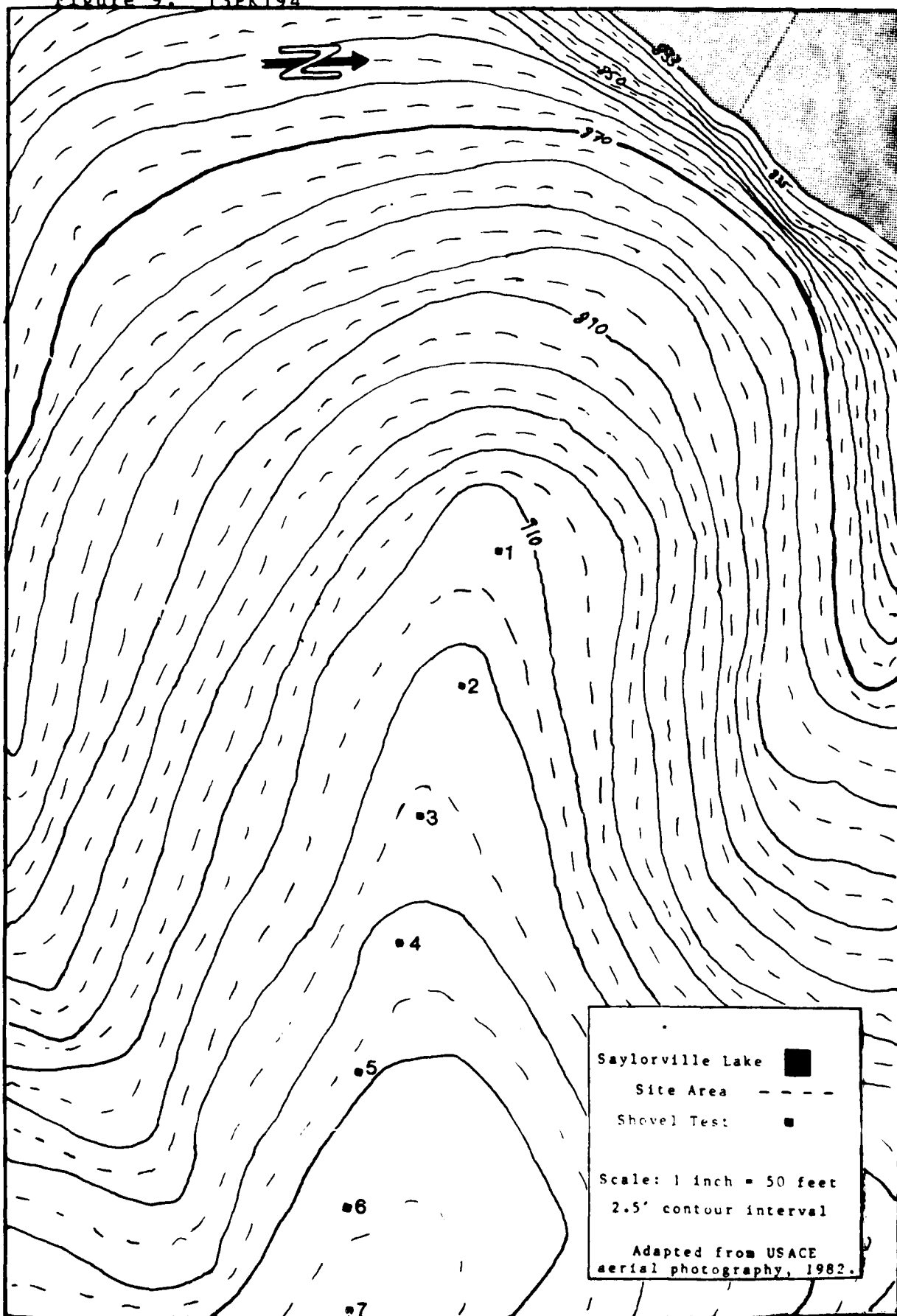
Testing Procedure: surface reconnaissance, cutbank planing, 7 shovel tests.

Material Recovered: Surface
5 primary flakes

Based on the distribution of surface materials, 13PK194 was originally defined as extending from the lakeshore (elevation 833') up to a finger ridge at elevation 915'. However, the subsurface testing done by ISU yielded cultural materials only at the upper-most elevations of the site area. By the time this site was resurveyed in 1982, a large portion of the original lower slope had been removed by the undercutting action of waves on the lake. The resulting escarpment has a slope exceeding 45% up to approximately elevation 910', above which point the degree of slope gradually lessens.

The existence of this escarpment precluded any subsurface testing between elevations 833' and 910', although the area was thoroughly inspected for cultural materials and large sections of cutbank were planed and examined. Six shovel tests were then done in a line running down the center of the narrow ridge

Figure 9. 13PK194



between elevations 910' and 930' (see Plate I-2). No artifacts were recovered from any of these tests. Examination of soil strata indicated that considerable erosion of topsoil has taken place, so it is probable that the cultural materials found at lower elevations were redeposited there by downslope movement of soil. It also appears probable that the site has been completely destroyed by this erosional action.

Based on one ceramic sherd recovered by ISU during site testing in 1976, a Late Woodland cultural affiliation was assigned to 13PK194. Additionally, it was hypothesized that the site represents a "short-term encampment associated with seasonal activities" (Ibid.). No materials were recovered during the 1982 survey that would conflict with these conclusions. (See Plate II-16.)

13PK195

Location: on a low prairie/savannah terrace, now on the east shore of Saylorville Lake, north of Commodore's Cove.

Previous Research: defined by ISU personnel during reconnaissance survey; no subsurface testing done; state site form dated 8-8-74.

Testing Procedure: surface reconnaissance, cutbank planing, 8 shovel tests.

Material Recovered:

Surface

- 1 core fragment
- 1 primary flake
- 35 secondary flakes
- 1 flake tool
- 1 hematite ax
- 9 grit body sherds, cr*
- 12 grit body sherds, smooth
- 4 ceramic crumbs
- 1 bone fragment

Shovel Test #6

10-20 cm 1 triangular projectile point

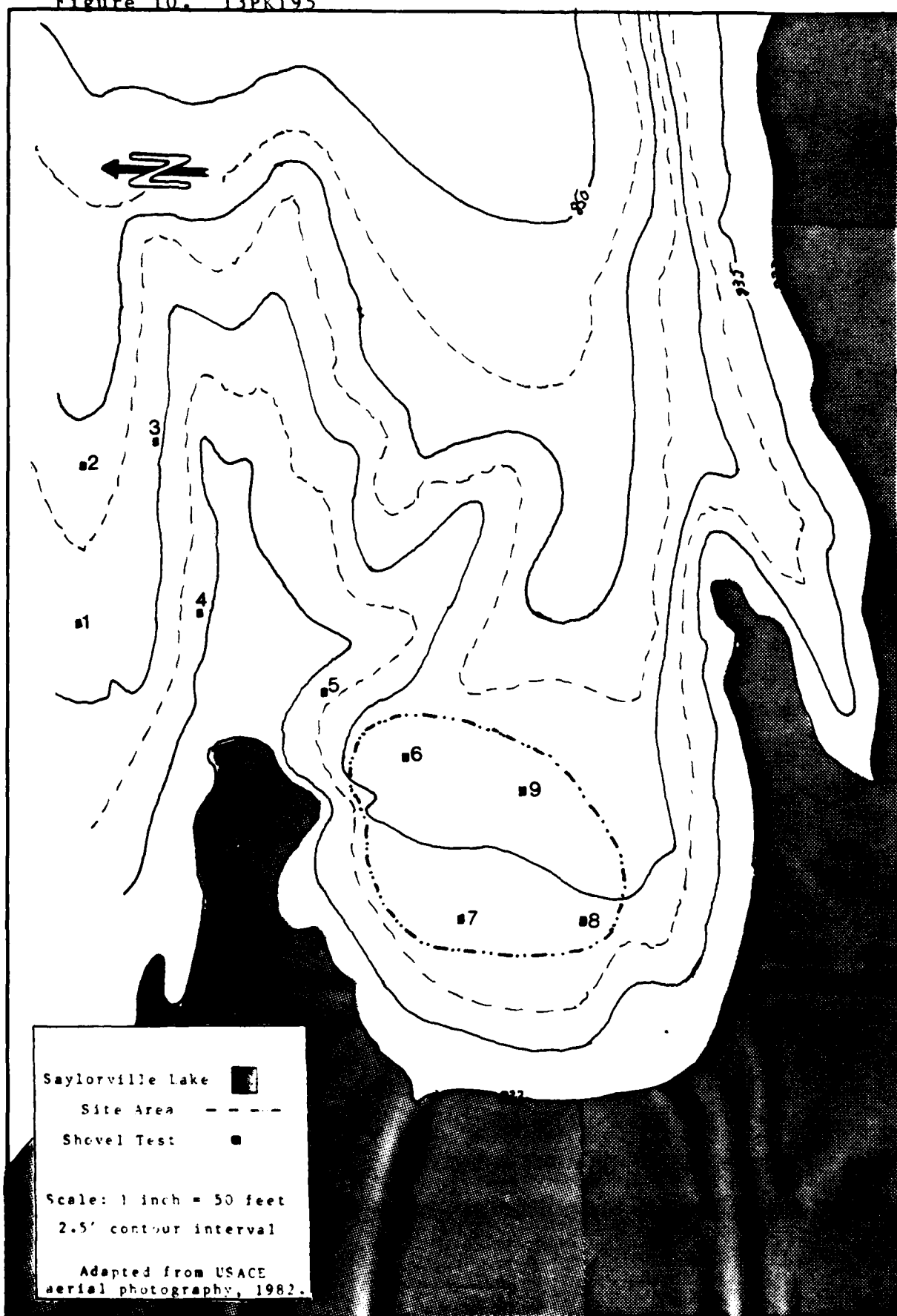
Shovel Test #7

10-20 cm 1 historic button

13PK195 exemplifies the drastic effect that both natural and man-made forces have had on archaeological resources at Saylorville Lake. The overall size of the terrace upon which the site is located has been considerably reduced by erosional action since the site was first recorded. The southern boundary of the site, as originally defined, abuts the edge of a large borrow area from which soil was removed for use in dam construction. The removal of an entire point which at one time separated the

* cord-roughened

Figure 10. 13PK195



site from Commodore's Cove had the affect of making 13PK195 much more susceptible to the erosive forces of wave action and bank slumpage than it otherwise might have been. The leading edge of the site which faces the lake has also been cut back by the action of wind and water (see Plate I-3).

The surface materials collected onsite in 1982 were concentrated primarily along the water's edge and the sandy beachline below the terrace escarpment. Their distribution suggested that they had been redeposited there by slumpage of the terrace edge, most probably during the previous few months of fluctuating water levels. Subsurface testing was thus intended mainly to determine how much of the original site area remained intact on the terrace remnant (see Plate I-4). Interestingly, the only subsurface materials recovered consisted of a triangular projectile point and a brass button, both of which came from the same approximate depth below the surface in adjacent shovel tests. The presence of the historic item indicates some form of disturbance, perhaps agricultural activity, which may have partially destroyed site integrity before Saylorville Lake came into existence.

The grit-tempered ceramics recovered during surface reconnaissance indicate, at the very least, a Woodland affiliation for 13PK195. The presence of the triangular projectile point suggests that Late Woodland is perhaps the most appropriate designation. Because what remains of the site is apparently only a small portion of the original occupation area, a determination of site function is not possible. (See Plates II-7 and II-13.)

13PK198

Location: on an upland ridge above the valley of the Des Moines River, now on the north shore of Saylorville Lake, east of the Highway 17 Bridge.

Previous Research: defined by ISU personnel during reconnaissance survey (Gradwohl & Osborn 1975:100); no subsurface testing; state site form not dated.

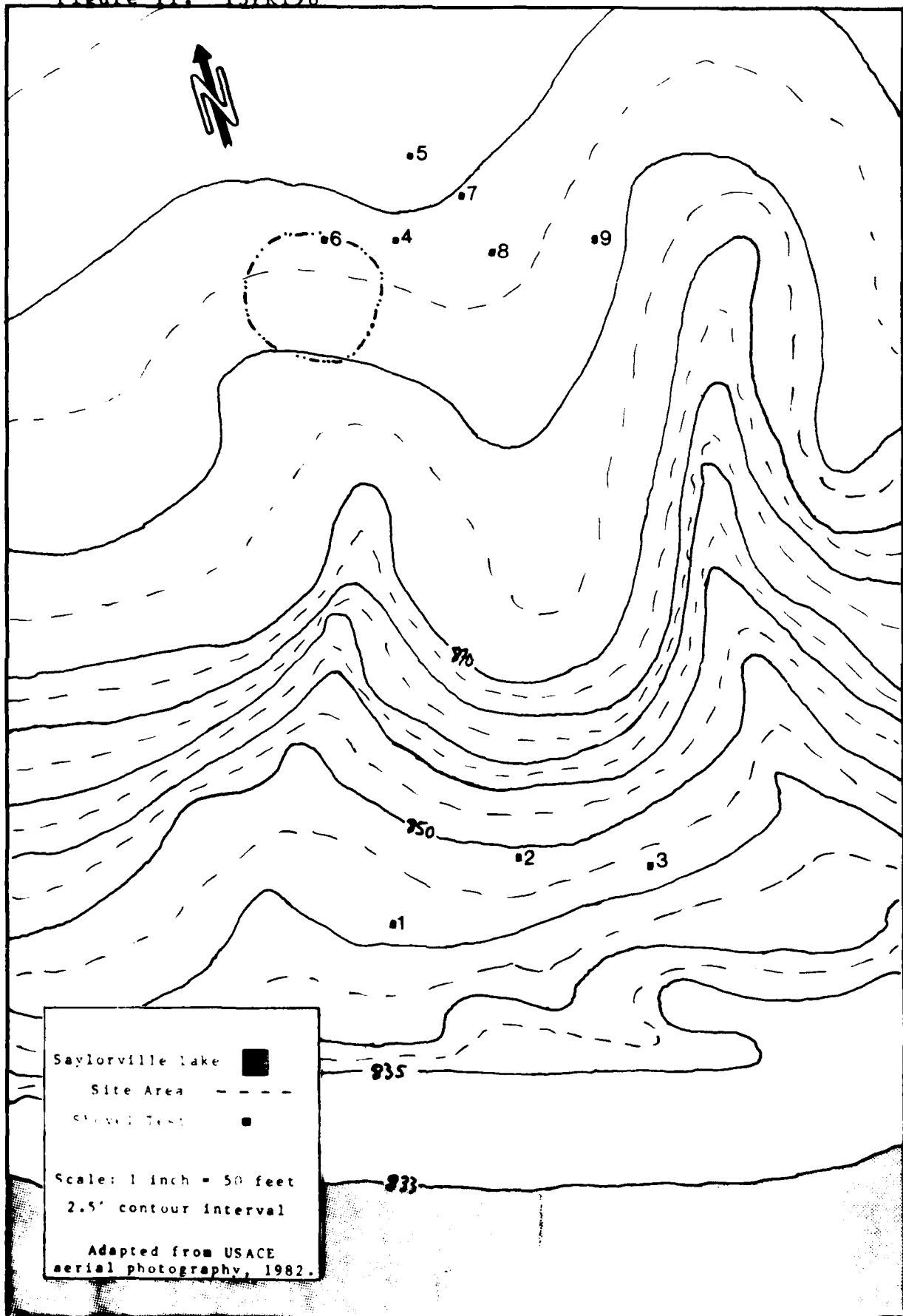
Testing procedure: surface reconnaissance, cutbank planing, 9 shovel tests.

Material Recovered: Shovel Test #4
50-60 cm 2 secondary flakes

Shovel Test #6
40-50 cm 1 primary flake

The original definition of this site by ISU, which was based on the distribution of surface materials, indicated that it is located between elevations 830' and 875'. During resurvey in 1982, the lower reaches of this area were found to have almost entirely disappeared due to wave action. In fact, soil erosion

Figure 11. 13PK198



has been so severe that bedrock shale layers are exposed just above the water's edge (see Plate I-5). Subsurface testing at this site was therefore concentrated at the higher elevations, in a wooded area and pasture which lie above approximately 875'. Two of the shovel tests yielded sparse evidence of human activity at depths below 40 cm. It may be, thus, that the site is actually located in this upland area, and materials found on surface at lower elevations were redeposited there by downslope movement of soil.

The small amount of cultural material recovered from 13PK198 does not allow for a determination of site function. Gradwohl & Osborn (*Ibid.*) did hypothesize a post-Woodland cultural affiliation for the site due to the presence of one triangular projectile point. (See Plate II-7.)

13PK242

Location: on a low prairie/savannah terrace, now on the northeast shore of Saylorville Lake, north of the boat launch at Cherry Glen Recreation Area.

Previous Research: defined by ISU personnel during reconnaissance survey; 35 shovel tests done by ISU in 1976 (Osborn & Gradwohl 1981:322-329); state site form dated 9-29-75.

Testing Procedure: surface reconnaissance, 4 shovel tests.

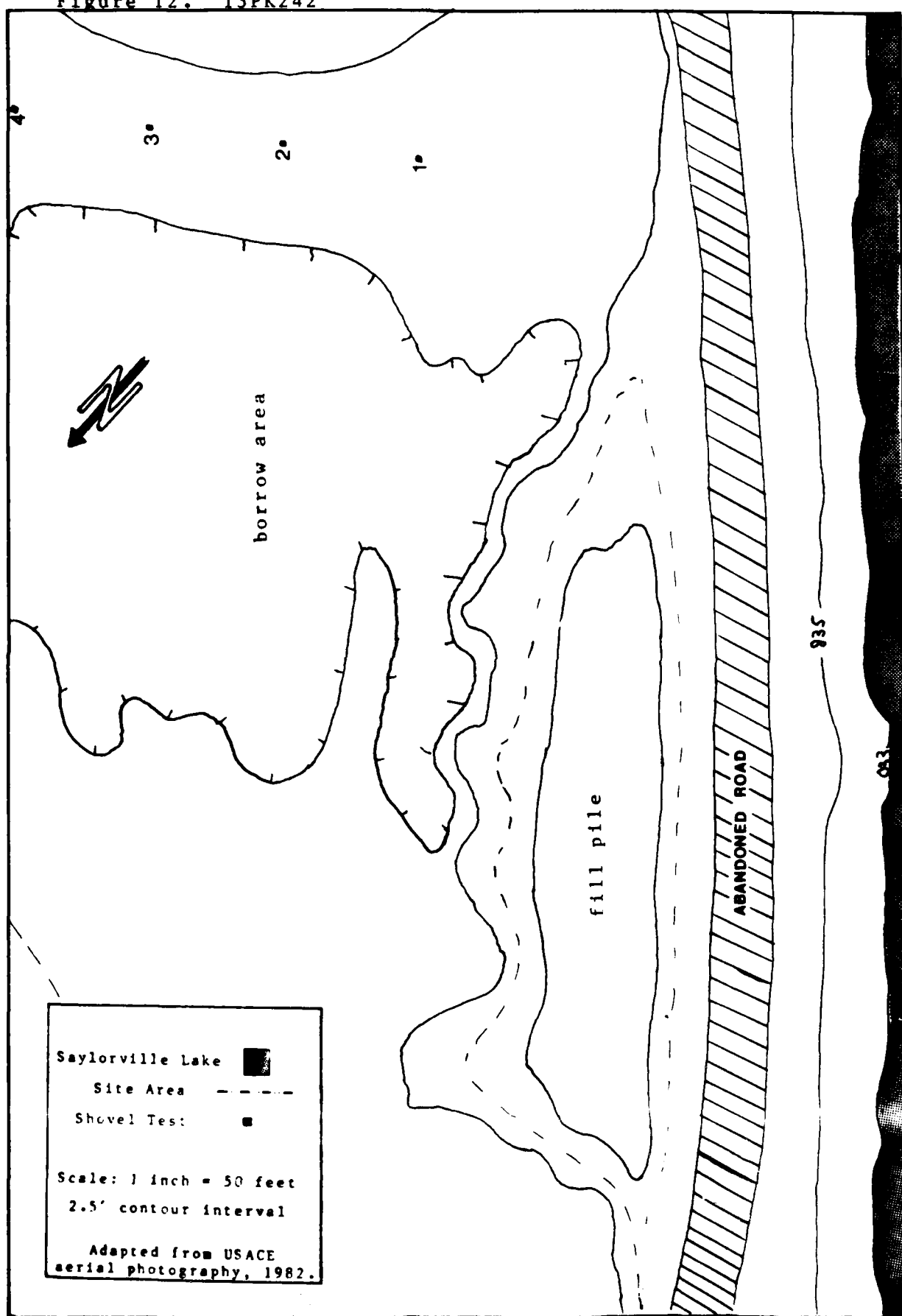
Material Recovered: Surface
 4 core fragments
 4 primary flakes
 22 secondary flakes

Shovel Test #1
 0-10 cm 2 secondary flakes
 10-20 cm 1 secondary flake
 20-30 cm 1 secondary flake

The terrace upon which 13PK242 is located has been subjected to a number of different disruptive activities in the past. It was cultivated land at one time, and was also crossed by a graded and gravelled county road. After the land was acquired by the Corps of Engineers, it was used as a borrow pit and temporary storage area for fill used in the construction of Cherry Glen (formerly Windy Harbor) boat launch. A parking lot was later constructed along the southern portion of the terrace; the northern edge of the lot was rip-rapped and a small stream which bisected the terrace was channelized.

The testing that ISU did at 13PK242 was in a 20-meter grid pattern over the site area. Despite the fact that 35 1-by-1 meter tests were done, only one artifact was recovered from subsurface context: a broken lanceolate projectile point. Because of the history of disturbance at this site, and because ISU's testing had rather thoroughly covered the area, it was

Figure 12. 13PK242



decided that a minimal amount of additional testing would be necessary. Surface reconnaissance was conducted along approximately 140 m of lakeshore, where a small quantity of lithic debitage was recovered (see Plate I-6). Four shovel tests were then done between the channelized drainage and the parking lot, in the general vicinity from which the projectile point had come. These tests yielded a very small amount of cultural material, found in soil strata that were obviously disturbed. Given the history of recent disruption at this location, it is unlikely that any further information could be recovered from 13PK242.

None of the material recovered in 1982 lends itself to determinations of site function or cultural affiliation. However, the projectile point recovered in 1976 has been described as similar to the Agate Basin type (*Ibid.*), which suggests a Paleo-Indian or Early Archaic timeframe. The rest of the artifactual materials recovered are not inconsistent with this estimation. (See Plate II-11.)

13PK246

Location: on an upland ridge above the valley of the Des Moines River, now on the northeast shore of Saylorville Lake, just south of the Polk City High Bridge.

Previous Research: defined by ISU personnel during reconnaissance survey (Gradwohl & Osborn 1975:65); no subsurface testing; state site form not dated.

Testing Procedure: surface reconnaissance, 11 shovel tests.

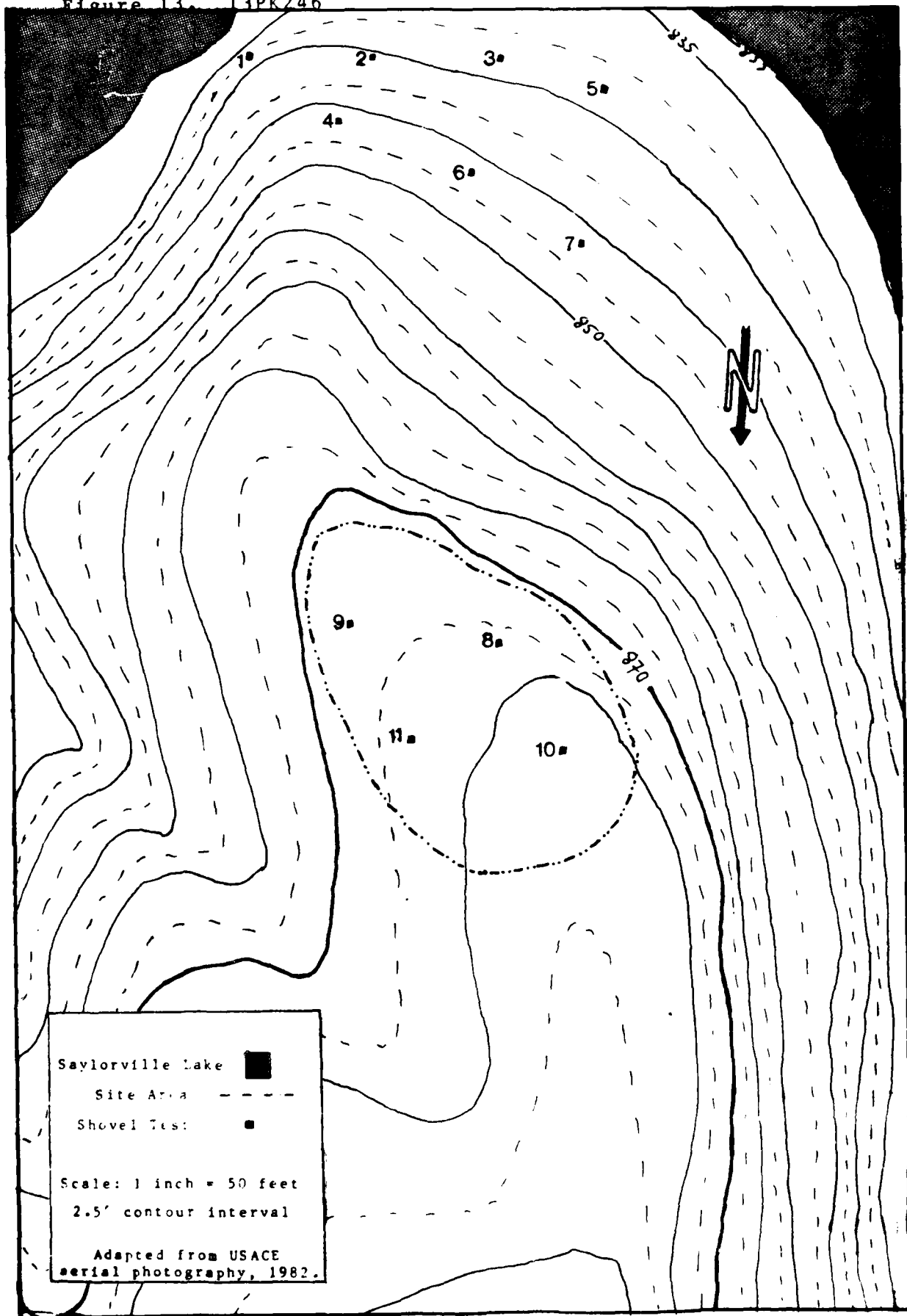
Material Recovered: Surface
1 core fragment
7 primary flakes
27 secondary flakes
1 scraper
1 grit body sherd, cr

Shovel Test #1
0-10 cm 1 secondary flake
20-30 cm 1 secondary flake
30-40 cm 1 secondary flake

Shovel Test #2
0-10 cm 1 secondary flake
10-20 cm 2 secondary flake

Shovel Test #3
10-20 cm 1 primary flake tool
1 secondary flake w/matrix
20-30 cm 2 secondary flakes
30-40 cm 1 secondary flake

Figure 13. 13PK246



Shovel Test #4
0-10 cm 1 secondary flake

Shovel Test #5
0-10 cm 1 retouch flake
30-40 cm 1 retouch flake

Shovel Test #6
10-20 cm 1 retouch flake

Shovel Test #7
30-40 cm 1 retouch flake

Shovel Test #9
10-20 cm 1 grit body sherd, eroded

13PK246 was defined by ISU as lying between elevations 833' and 875'. The lower portion of this area consists of a relatively broad, sandy beachline, along which all of the surface materials listed above were found (see Plate I-7). Shovel testing along the beach did yield some cultural materials, but was most useful in allowing for examination of the soil stratigraphy in the area. The soil strata revealed in most of the shovel tests consisted of alternating thin layers of dark silt and white sand, extending in some cases to a depth of 30 cm (see Plate I-8). This stratigraphy testifies to the manner in which shoreline configurations are altered by fluctuations in the lake level. The artifacts recovered from these shovel tests were probably not in original context, but were redeposited by rising and falling waters, along with silt and sand.

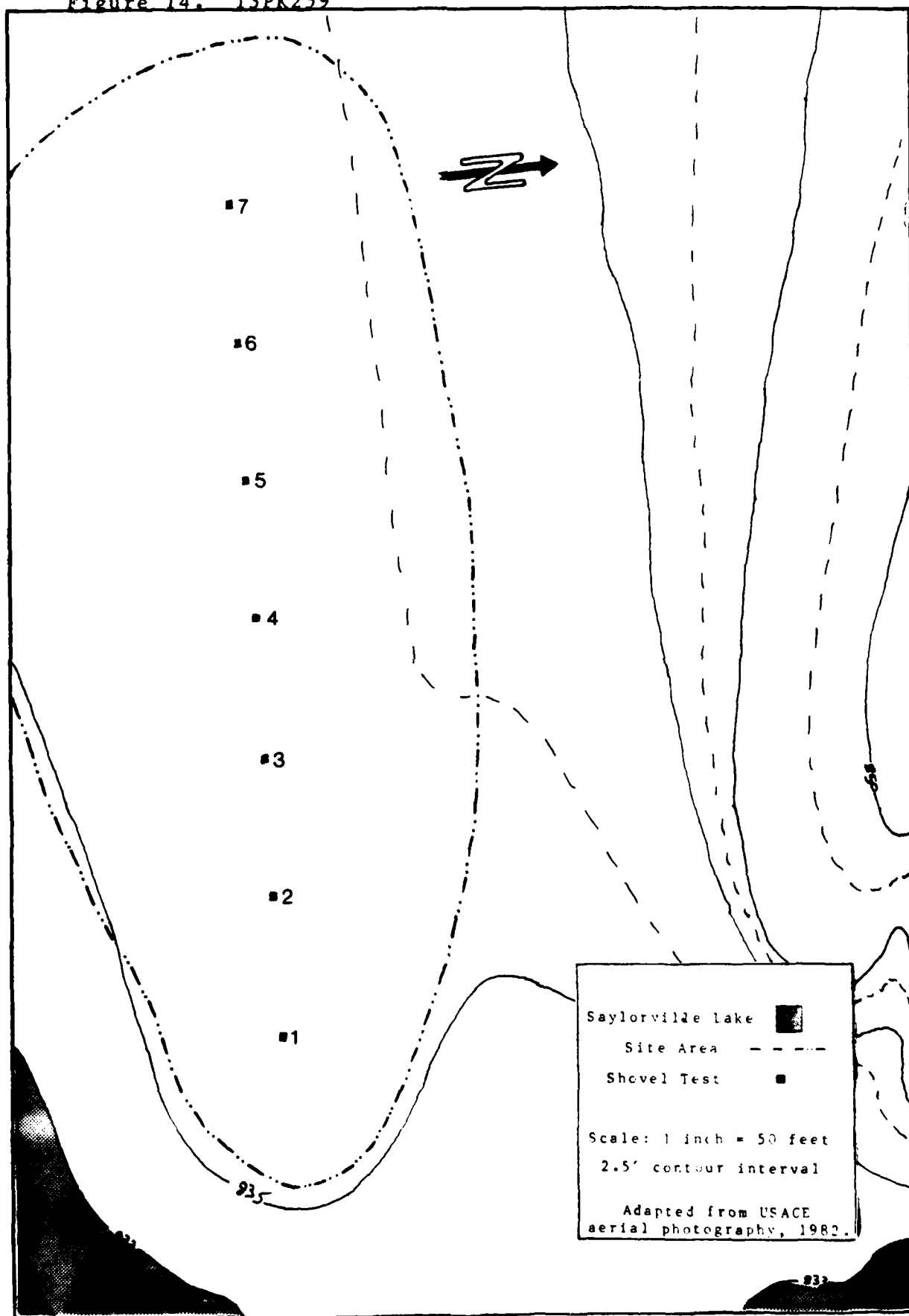
The conditions revealed in these shovel tests suggested that this site is similar to 13PK198, in that cultural materials found on surface at the lower elevations probably represent erosion of the horizontal component of a site actually located at higher elevations. To test this supposition, another set of shovel tests were done on the narrow bluff above the beachline. Here, additional cultural materials were recovered, that appeared to have a much more reliable provenience than those recovered close to the water's edge. Thus, the data recovered during resurvey of this site indicate that the site area is actually confined to the blufftop, and does not extend down to the shore.

The presence of grit-tempered ceramics at this site indicates, at the very least, some sort of generalized Woodland occupation. However, none of the sherds or lithic artifacts recovered are distinctive enough to allow for a more specific temporal or functional classification.

13PK259

Location: on an intermediate prairie/savannah terrace, now on the northeast shore of Saylorville Lake, south of the Highway 17 Bridge.

Figure 14. 13PK259



Previous Research: defined by ISU personnel during reconnaissance survey; no subsurface testing; state site form dated 5-27-76.

Testing Procedure: surface reconnaissance, 7 shovel tests.

Material Recovered: Surface
5 core fragments
26 primary flakes
330 secondary flakes
65 retouch flakes
5 projectile points (stemmed, corner-notched, triangular)
5 scrapers
4 flake tools
7 knives
1 borer
4 grit body sherds, cr
3 grit body sherds, eroded
3 bone fragments

Shovel Test #1
0-10 cm 1 secondary flake

Shovel Test #2
0-10 cm 1 secondary flake
10-20 cm 1 secondary flake
20-30 cm 1 secondary flake
30-40 cm 1 secondary flake
1 projectile point base, corner-notched

Shovel Test #3
30-40 cm 1 secondary flake
40-50 cm 1 secondary flake

Shovel Test #5
0-10 cm 1 secondary flake

Shovel Test #7
20-30 cm 1 secondary flake

This site was initially identified by ISU on the basis of cultural materials found on the surface of a cultivated field. When the site was first visited in 1982, the results of surface reconnaissance were in startling contrast to the results of that procedure at most of the other sites with which this survey was concerned. The quantity, variety and distribution of materials recovered from surface, although restricted to a relatively small horizontal area, suggested the existence of a substantial, essentially intact site at this location (see Plate I-9).

Seven shovel tests were done at 13PK259, in an east-west transect down the approximate center of the distribution of surface materials. The results of those tests indicated that while the upper reaches of the site have been somewhat disturbed

by cultivation and deposition of silt during times of high water, a considerable portion of the vertical site component remains undisturbed below the plowzone.

A wide range of diagnostic materials were recovered from this site. Projectile point types range from typical Archaic forms to the small triangular points characteristic of Late Woodland or Mississippian cultural complexes. A few ceramic sherds were also recovered, but they were in extremely poor condition and were not useful for determining cultural affiliation. The presence of so many tools and so much lithic debitage, when related to the physiographic position of the site, suggest that it may have been occupied primarily for purposes of food procurement. (See Plates II-10 and II-14.)

13PK263

Location: on the floodplain of the Des Moines River, now on the north shore of Saylorville Lake, southeast of the Highway 17 Bridge.

Previous Research: defined by ISU personnel during reconnaissance survey; no subsurface testing; state site form dated 5-27-76.

Testing Procedure: surface reconnaissance, cutbank planing, 6 shovel tests.

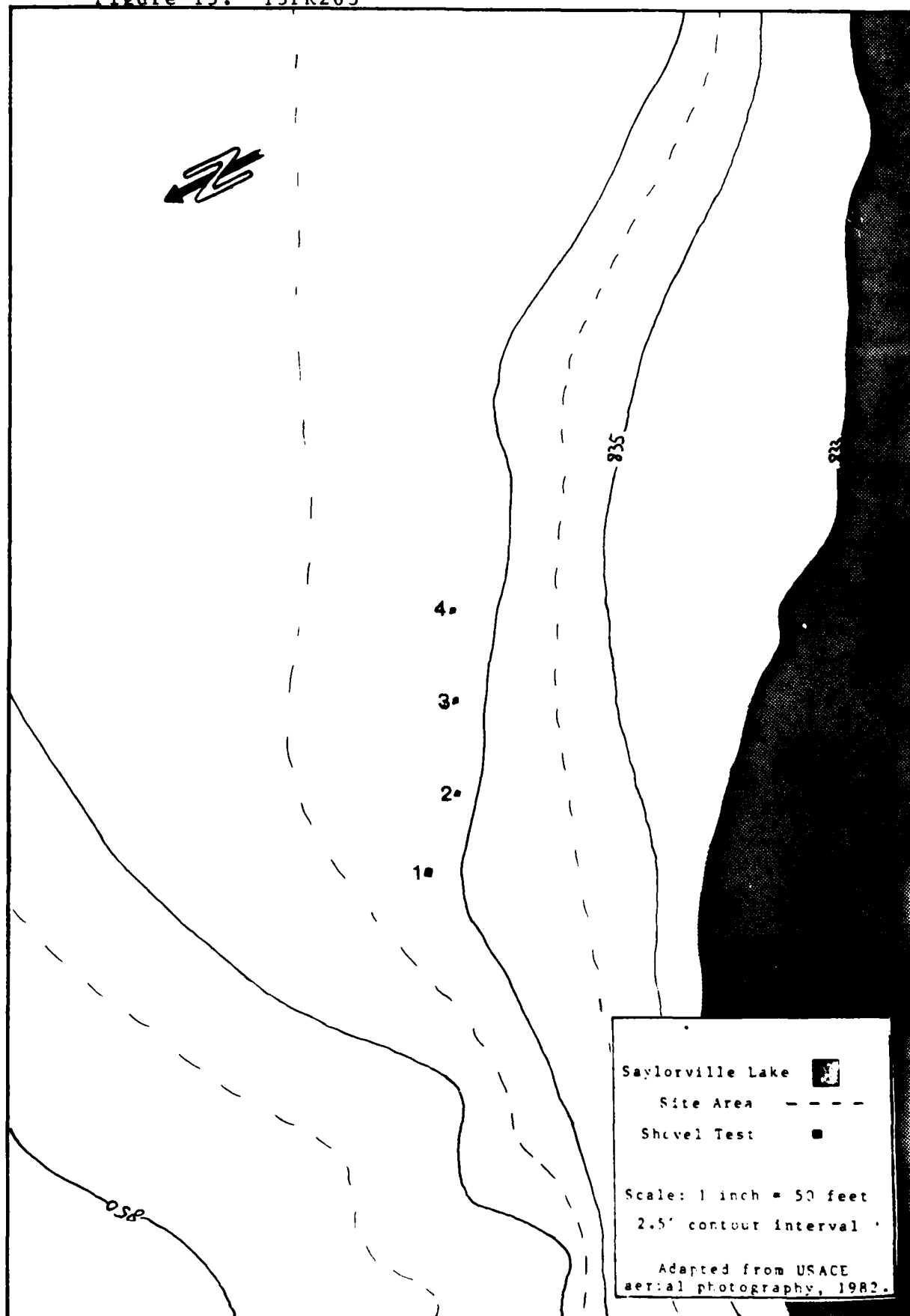
| | |
|---------------------|----------------------------|
| Material Recovered: | <u>Surface</u> |
| | 5 core fragments |
| | 6 primary flakes |
| | 38 secondary flakes |
| | 1 retouch flake |
| | 1 projectile point |
| | 1 grit rim sherd, smooth |
| | 1 grit body sherd, cr |
| | 8 grit body sherds, smooth |
| | 4 bone fragments |

| | |
|---------|-----------------------|
| | <u>Shovel Test #1</u> |
| 0-10 cm | 1 secondary flake |

| | |
|---------|-----------------------|
| | <u>Shovel Test #3</u> |
| 0-10 cm | 1 secondary flake |
| | 1 ceramic crumb |

As originally defined, this site lies immediately along the waterline of Saylorville Lake, at elevation 833'-835'. When the area was visited in 1982, evidence of the effect of fluctuating lake levels and wave action was plentiful. The rather gradual slope from the river bottom up to the terrace which once existed has been reshaped and now consists of a narrow beachline bordered by a short but steep cutbank (see Plate I-10). Intensive surface reconnaissance was conducted along the cutbank and shoreline; a number of artifacts were found in that vicinity, all of which

Figure 15. 13PK263



came from obviously disturbed context.

Shovel testing was done along the edge of the terrace remnant, just above the eroded fringe. The few artifacts that were recovered from these tests all came from the top 10 centimeters, in what appeared to be a recently-deposited sedimentary soil stratum. If the original definition of site location is taken as correct, it must be concluded that the site is either completely inundated, or has been destroyed by erosion. The minimal information that is available about 13PK263 does not allow for a determination of site function; the few diagnostic artifacts that were recovered indicate a Woodland cultural affiliation - most probably Early to Middle Woodland. (See Plates II-11, II-14, and II-16.)

13PK264

Location: on the floodplain of the Des Moines River, now on the north shore of Saylorville Lake, east of the Highway 17 Bridge.

Previous Research: defined by ISU personnel during reconnaissance survey; no subsurface testing; state site form dated 5-27-76.

Testing Procedure: surface reconnaissance, 6 shovel tests.

Material Recovered:

Surface

- 3 core fragments
- 4 primary flakes
- 6 secondary flakes
- 2 retouch flakes
- 2 grit rim sherds (vertical cr; cord- & fabric-impressed)
- 83 grit body sherds, cr
- 3 grit body sherds, cord-impressed
- 1 shell body sherd w/faint incising
- 1 shell body sherd, trailed
- 1 shell body sherd, smooth
- 1 shell loop handle
- 12 ceramic crumbs
- 1 historic crockery sherd
- 69 bone & tooth fragments

Shovel Test #3

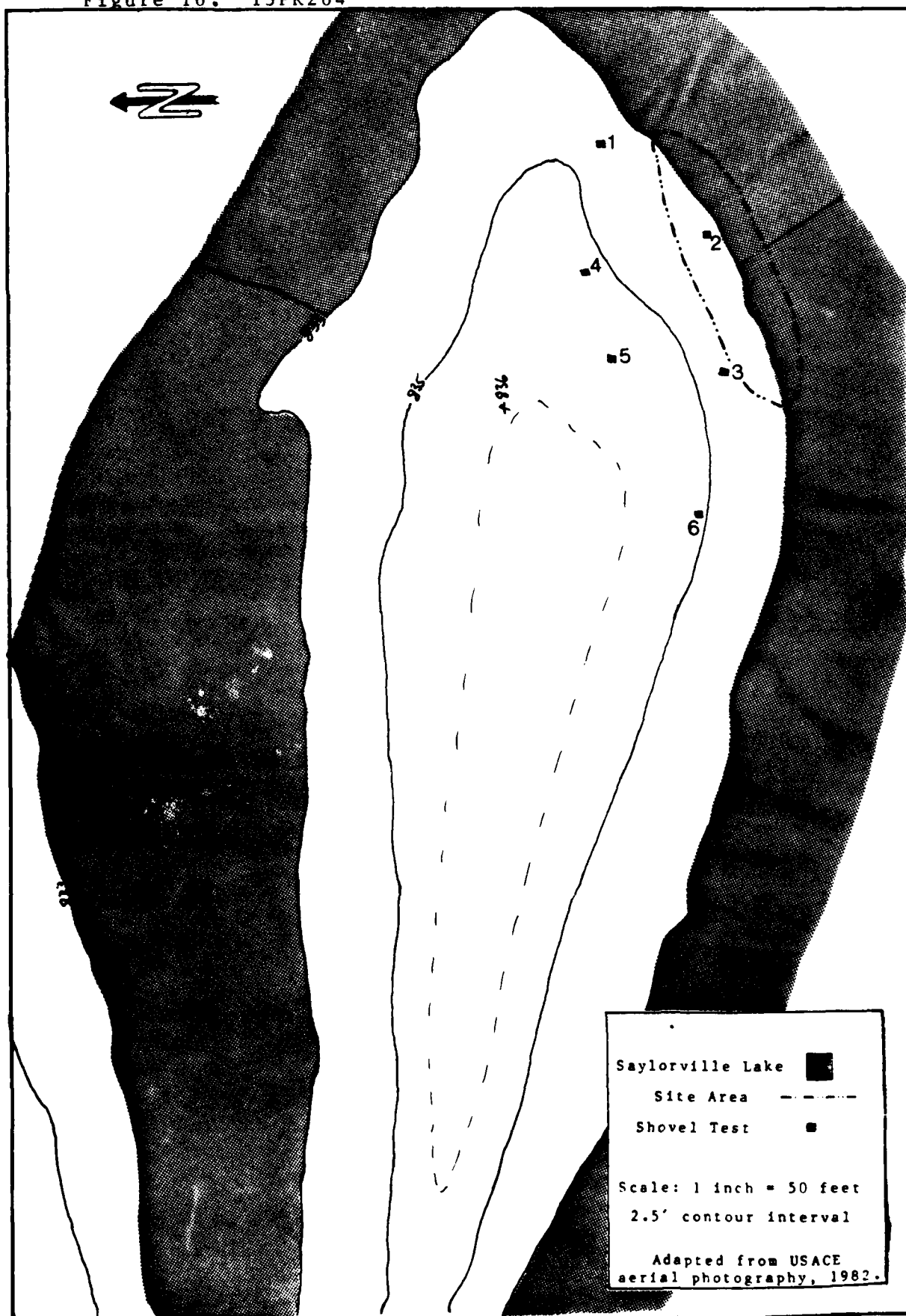
| | |
|----------|-----------------------|
| 0-10 cm | 1 secondary flake |
| | 1 grit body sherd, cr |
| 20-30 cm | 2 secondary flakes |
| | 2 charcoal fragments |

Shovel Test #5

| | |
|----------|------------------|
| 20-30 cm | 4 bone fragments |
| 30-45 cm | 4 bone fragments |

The interpretation of data gathered during the resurvey of 13PK264 was a rather complex problem. The site was defined in

Figure 16. 13PK264



1976 as lying in the river bottoms, at elevation 833'-836'. In 1982, the recorded site location was found to be the site of a small knoll rising about 7' above the lake level and surrounded on three sides by water. The vast majority of the "surface" material collected from this knoll came from a constricted area along the water's edge - much of it retrieved by crew members wading in a few inches of water (see Plate I-11). Shovel testing did yield some subsurface material, but the soil matrix in which it was enclosed appeared to be of rather recent origin.

The results of surface and subsurface testing in 1982 indicated that at least part of the actual site area is now underwater. The ceramics from 13PK264 do not appear to have been as badly degraded by water action as the ceramics from many other sites, which suggests that they may have only recently washed out of their original location. Most of the sherds and bone fragments were found together, within an area not more than 1 meter square at the water's edge - a configuration that is reminiscent of the contents of a midden (see Plate I-12).

Included in the cultural materials recovered from 13PK264 are the only examples of shell-tempered pottery found during the entire survey project: 3 body sherds (one trailed and one with faint traces of either trailing or incising) and one rather battered-looking loop handle. Grit-tempered sherds displaying a variety of surface treatments and decorative modes were also recovered.

The extremely large quantity of ceramic sherds recovered at this site suggest that it was some type of permanent or semi-permanent habitation site. The juxtaposition of shell-tempered and grit-tempered sherds indicate that the site may hold some potential for examination of the interaction of Mississippian and Woodland cultures in the central Des Moines River Valley. (See Plates II-7, II-8, II-16, II-17, II-19, and II-21.)

13PK266

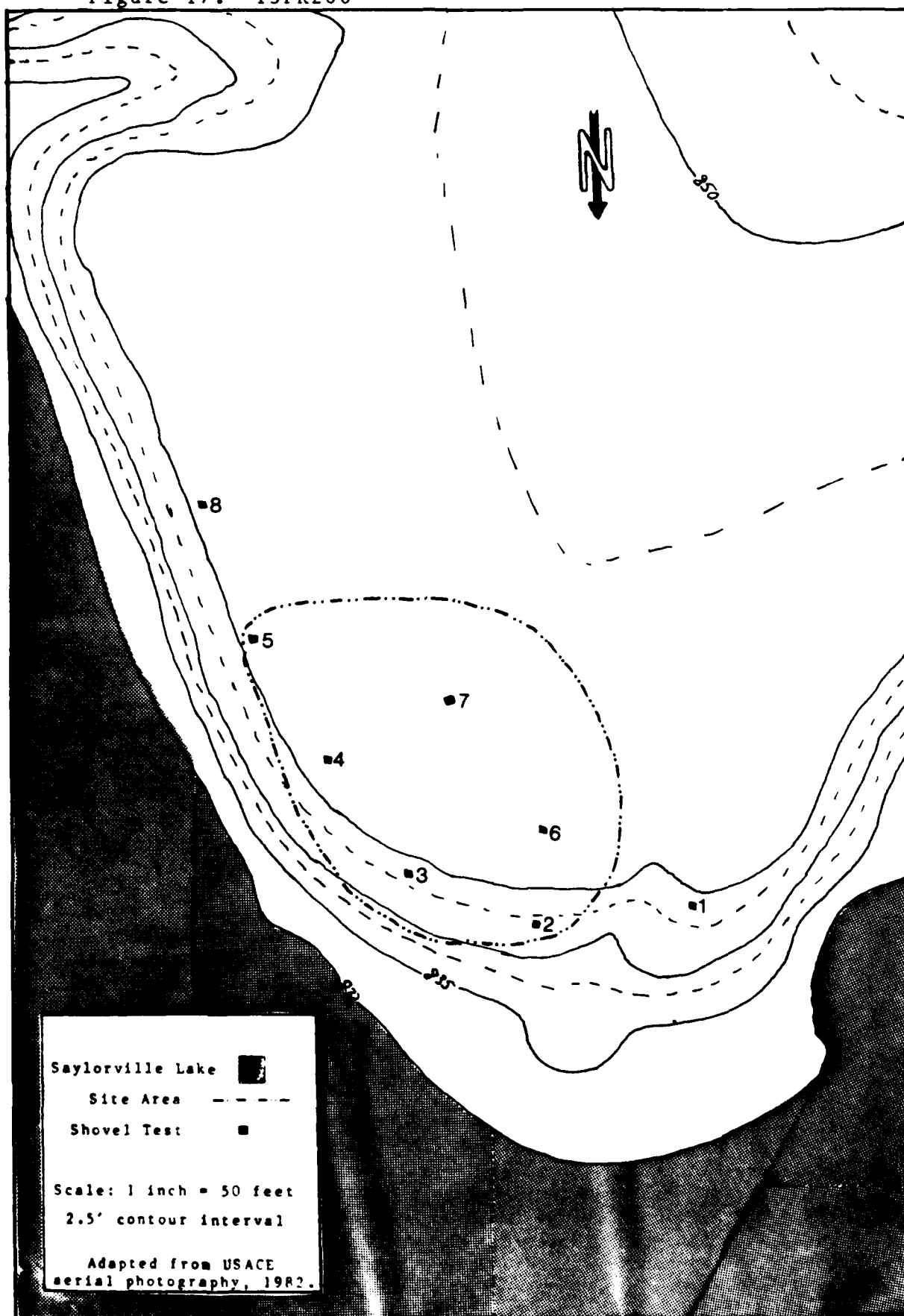
Location: on a low prairie/savannah terrace, now on the southwest shore of Saylorville Lake, just south of the Jester Park boat launch.

Previous Research: defined by ISU personnel during reconnaissance survey; briefly shovel tested by ISU; state site form dated 8-25-76.

Testing Procedure: surface reconnaissance, cutbank planing, 9 shovel tests.

| | |
|---------------------|---------------------|
| Material Recovered: | <u>Surface</u> |
| | 2 core fragments |
| | 20 primary flakes |
| | 81 secondary flakes |
| | 3 retouch flakes |
| | 1 sidescraper |

Figure 17. 13PK266



Surface, cont.

1 punch

1 rim sherd, cr w/interior tool
impression

Shovel Test #1

0-10 cm 1 retouch flake

Shovel Test #3

10-20 cm 1 primary flake

30-40 cm 1 retouch flake

40-50 cm 1 secondary flake

Shovel Test #4

0-10 cm 2 secondary flakes

30-40 cm 2 secondary flakes

40-50 cm 3 secondary flakes

Shovel Test #6

0-10 cm 1 secondary flake

10-20 cm 1 retouch flake

20-30 cm 1 secondary flake

1 retouch flake

Shovel Test #8

25-30 cm 1 secondary flake

The subsurface testing done at 13PK266 by ISU consisted of two test pits (size and location not recorded) which did yield a small amount of cultural material. When the site was resurveyed in 1982, it appeared that a portion of it had been destroyed by slumpage of the terrace edge. The majority of material found on surface at that time came from within a thin layer of white sand which covered the terraced cutbank along the lakeshore (see Plate I-13). Subsurface testing did reveal that some of the site does remain intact and apparently undisturbed by agricultural or other activities. The concentration of artifacts from shovel tests, as indicated above, is relatively diffuse, but consistent in vertical distribution.

During resurvey, a permanent benchmark (a brass plate set in concrete) not shown on any map of the area was discovered on the northern edge of the site. A description of this benchmark was sent to the U. S. Coast & Geodetic Survey, but they were unable to identify it. That agency suggested that it may have been installed during one of the surveys sponsored by WPA in the 1930's, many of which were never completed.

The lone ceramic sherd recovered from this site was found on the terraced cutbank, about 1 meter above the waterline; one hesitates to assign cultural affiliation on the basis of one artifact with such indefinite provenience. The distribution and types of lithic materials found suggest that this site may have been a habitation. However, one would normally expect to find more than one sherd at a Woodland occupation site. It may be

that the main occupation area is no longer extant due to erosion, and only the fringes of the site area remain. (See Plates II-13 and II-16.)

13PK267

Location: on an upland ridge, now on the southwest shore of Saylorville Lake, south of the Polk City High Bridge.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 1-26-77.

Testing Procedure: surface reconnaissance, cutbank planing, 5 shovel tests.

Material Recovered: none.

Although the area in which this site is located was examined during reconnaissance survey prior to 1975 (Gradwohl & Osborn 1975), the existence of the site was not discovered until the area was cleared of trees in 1976. The removal of vegetation from the terrace encouraged the erosion of topsoil, and revealed the presence of artifactual materials on the surface of the terrace. By the time the site was resurveyed in 1982, bank slumpage had resulted in the apparent removal of the entire site area. Subsurface testing yielded no evidence of cultural activity, and the materials recovered from surface were all found on the steep cutbank within approximately 3 meters of the water's edge. Those materials may represent the final remnants of the site, which were in the process of washing away as a result of the flooding which took place just before resurvey was done (see Plate I-14).

None of the artifactual materials recovered from this site by ISU are diagnostic of cultural affiliation. Since no additional materials were recovered during resurvey, and because the site was destroyed before any examination of its actual extent or internal structure could be made, no determinations of site function or cultural affiliation can be hypothesized.

13PK272

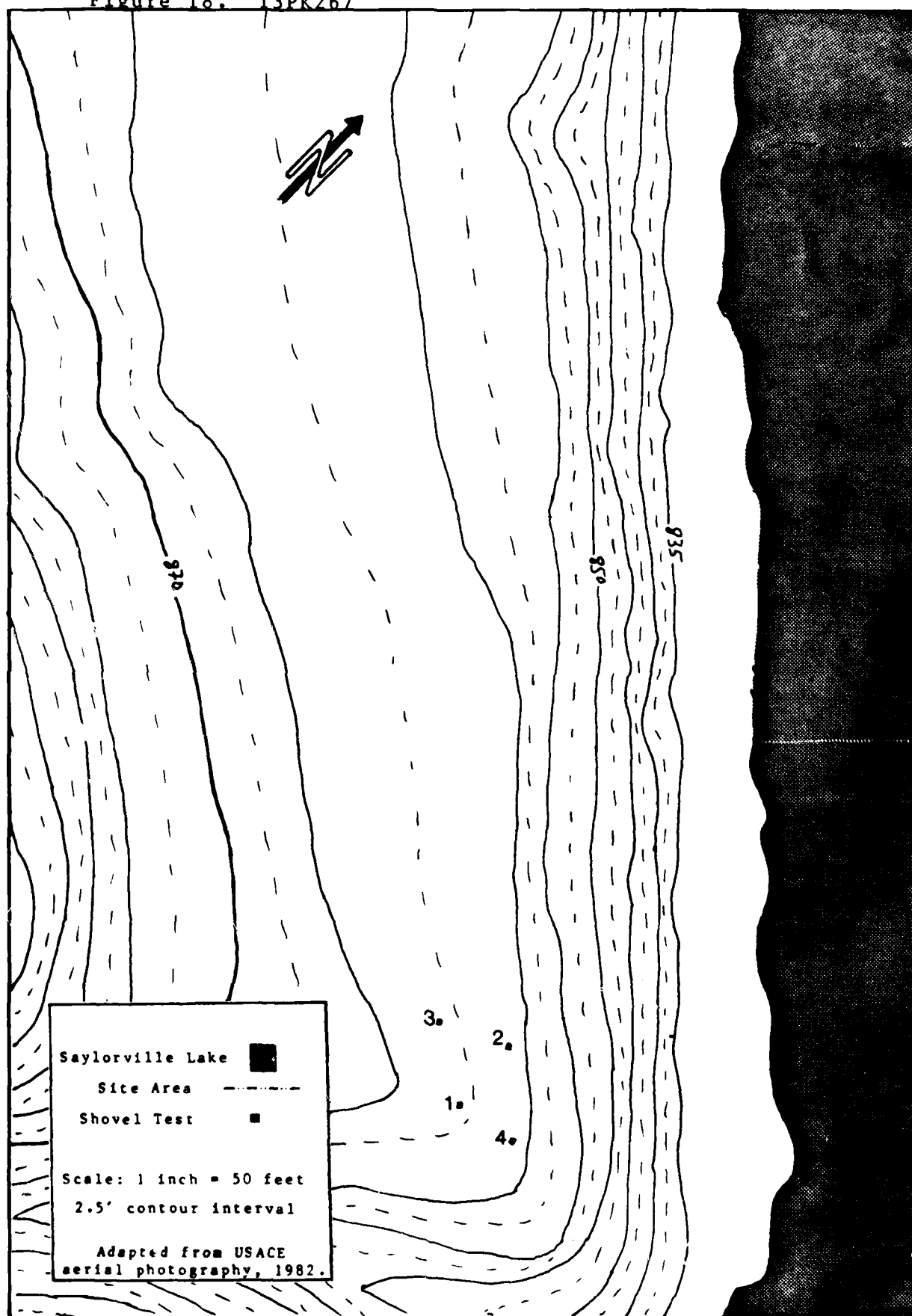
Location: on an alluvial fan, now on the southwest shore of Saylorville Lake, north of the Lakeview Recreation Area.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 9-24-76.

Testing Procedure: surface reconnaissance, 5 shovel tests.

Material Recovered: Surface
2 core fragments
3 primary flakes
7 secondary flakes

Figure 18. 13PK267



Surface, cont.

- 1 retouch flake
- 1 flake tool
- 1 groundstone tool
- 2 grit body sherds, cr
- 1 grit body sherd, eroded
- 1 ceramic crumb

13PK272 is one in a series of contiguous sites which were all defined by ISU on the basis of surface materials found along what is now the southwest shore of Saylorville Lake. These sites (including 13PK273, 13PK274, 13PK277 and 13PK279, all discussed below) were initially located just after the area had been cleared of trees, and the boundaries between site areas were apparently defined primarily on the basis of natural divisions such as inlets and footslopes. ISU personnel revisited these sites after impoundment of waters by Saylorville Dam. The cultural materials collected from surface at 13PK272 and 13PK273 at that time were all catalogued in the inventory for 13PK272, since redeposition by wave action was assumed and the proper provenience for those materials could not be determined.

It was hoped that subsurface testing of these sites would allow for clearer definition of site boundaries. However, the shovel testing done at 13PK272 yielded no cultural materials at all, suggesting that the surface materials found on site may have been deposited there by erosional processes.

No clear indication of probable site function was attained during resurvey of this site. Iowa State University had recovered a cord-impressed rim sherd during initial survey, which indicates a Late Woodland cultural affiliation, as well as a small notched projectile point. (See Plates I-15, II-7, II-8, II-12, and II-16.)

13PK273

Location: on an alluvial fan, adjacent to 13PK272.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 9-24-76.

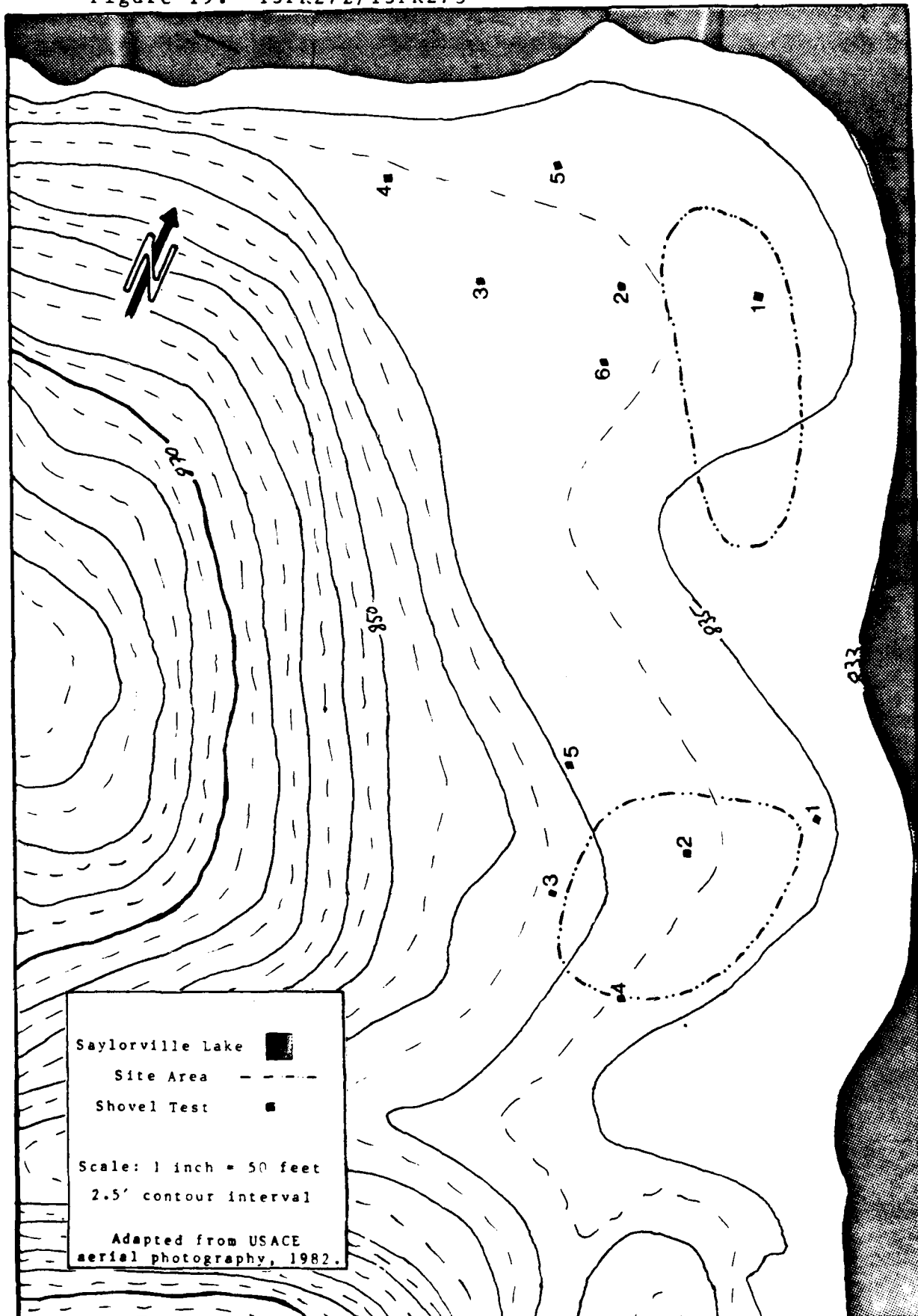
Testing Procedure: surface reconnaissance, 6 shovel tests.

Material Recovered:

Surface

- 6 core fragments
- 7 primary flakes
- 40 secondary flakes
- 5 projectile points (broken; corner-notched)
- 2 thumbnail scrapers
- 1 broken scraper
- 6 flake tools
- 1 slate celt

Figure 19. 13PK272/13PK273



Surface, cont.

2 knives
1 preform
1 grit body sherd, cr
1 grit body sherd, eroded
4 ceramic crumbs
1 historic crockery sherd

Area between
13PK272 & 13PK273: 1 primary flake
12 secondary flakes
1 retouch flake

Shovel Test #2

10-20 cm 1 secondary flake
20-30 cm 3 secondary flakes
30-40 cm 1 secondary flake

Shovel Test #3

30-40 cm 1 secondary flake

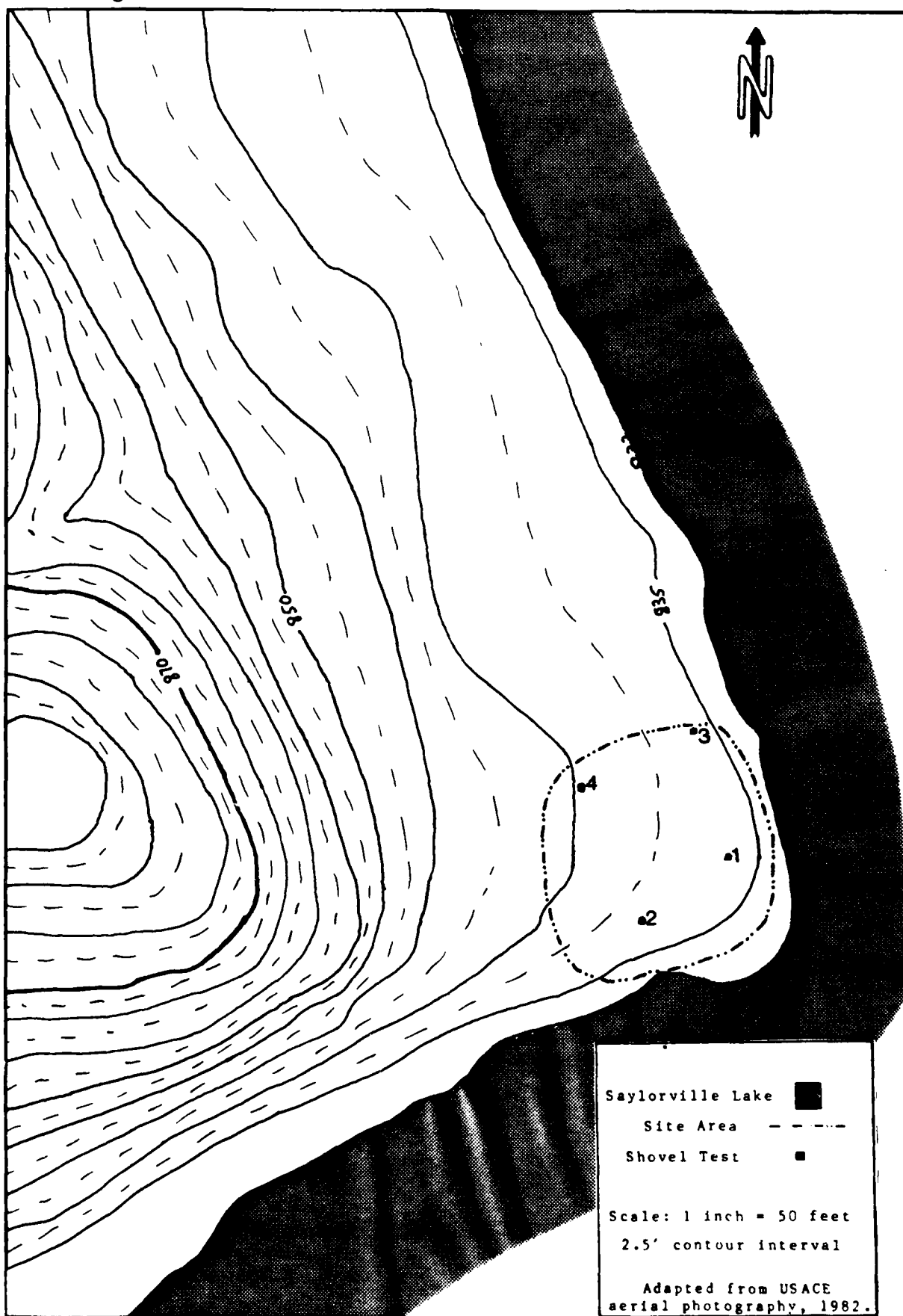
13PK273, as defined by ISU, is separated from 13PK272 by a small dip in the shoreline between two alluvial fans. A minor portion of the surface material recovered during resurvey was found in this area; a considerably larger number of artifacts were found within the site area proper, as indicated above. A majority of the surface artifacts were recovered from the leading edge of the fan along the lakeshore, within approximately 1 m of the water's edge. Even though the soil strata appeared relatively undisturbed below 10 cm, subsurface testing was not very productive: only a few flakes were recovered. However, the topography of the site area makes it rather susceptible to sheet erosion of topsoil, which may account for the lack of subsurface materials (see Plate I-16).

Since the only diagnostic artifacts found at this site were surface materials, assignment of cultural affiliation must be approached with caution. The quantity of material found in a relatively constricted area close to the waterline suggests two possibilities for the origin of that material: part of the site area is now below the normal pool elevation and artifacts are washing up onto the beach from below the waterline, or the main portion of the site area is just eroding away and artifacts are being deposited on the eroded fringe as the soil washes away. Based on the information previously gathered at this site, it is not possible to determine precisely which is the case at this time. As is the case with 13PK274, the presence of a few ceramic sherds at this site suggests the possibility of a generalized Woodland cultural affiliation. Several of the points recovered from 13PK273 are too broken to be clearly classified. The remainder are shallowly-notched points that indicate a Late Archaic to Early/Middle Woodland classification (see Plate II-9).

13PK274

Location: on an alluvial fan, adjacent to 13PK273.

Figure 20. 13PK274



Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 9-24-76.

Testing Procedure: surface reconnaissance, cutbank planing, 4 shovel tests.

Material Recovered: Surface
15 core fragments
3 primary flakes
36 secondary flakes
1 projectile point, corner-notched
1 knife
2 scrapers (thumbnail; turtleback)
1 tool midsection
1 abrader
2 grit body sherds, cr
1 grit body sherd, incised
3 grit body sherds, eroded
1 historic crockery sherd

Shovel Test #1
30-40 cm 1 secondary flake

Shovel Test #2
0-10 cm 3 secondary flakes
10-20 cm 3 secondary flakes
20-30 cm 1 secondary flake

Shovel Test #4
30-40 cm 1 primary flake
40-50 cm 2 bone fragments

The original state site form for 13PK274 indicated that it was located between elevations 850' and 870', at which level surface materials were found. However, within the area defined by the legal description, the only terrain at that elevation slopes down to an inlet at approximately a 60% angle - not a likely location for prehistoric activity. Thus, survey was concentrated on the relatively level portion of the fan just below that slope, upon which a quantity of cultural material was found. The major concentration of artifacts was along the cutbank on the southern edge of the site; a number of items were found within the roots of a tree stump, partially buried in sand. These artifacts may have been deposited here after washing out of the cutbank along the inlet during flooding.

Shovel testing on the alluvial fan did indicate that the vertical component of this site remains at least partially intact. While there was some obvious disturbance of the soil above 10 cm, soil stratigraphy in the lower reaches of the shovel tests appeared to be reasonably intact and undisturbed. The horizontal distribution of cultural materials was rather constricted from south to north, being no more than about 35 meters wide (see Plate I-17).

The few diagnostic artifacts recovered during surface reconnaissance include Archaic forms as well as some characteristic Havana-Hopewell variants. Unfortunately, no evidence which would clarify the temporal classification of this site designation was found in subsurface context (see Plates II-9, II-11 and II-12).

13PK275

Location: on a low prairie/savannah terrace, now on the southwest shore of Saylorville Lake, south of the Polk City High Bridge.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 9-27-76.

Testing Procedure: surface reconnaissance, cutbank planing, 8 shovel tests.

Material Recovered: Surface
1 primary flake
11 secondary flakes
1 projectile point tip
1 ground hammerstone

Shovel Test #3
0-10 cm 1 secondary flake
25-30 cm 1 secondary flake
1 primary flake

Shovel Test #4
0-5 cm 1 secondary flake

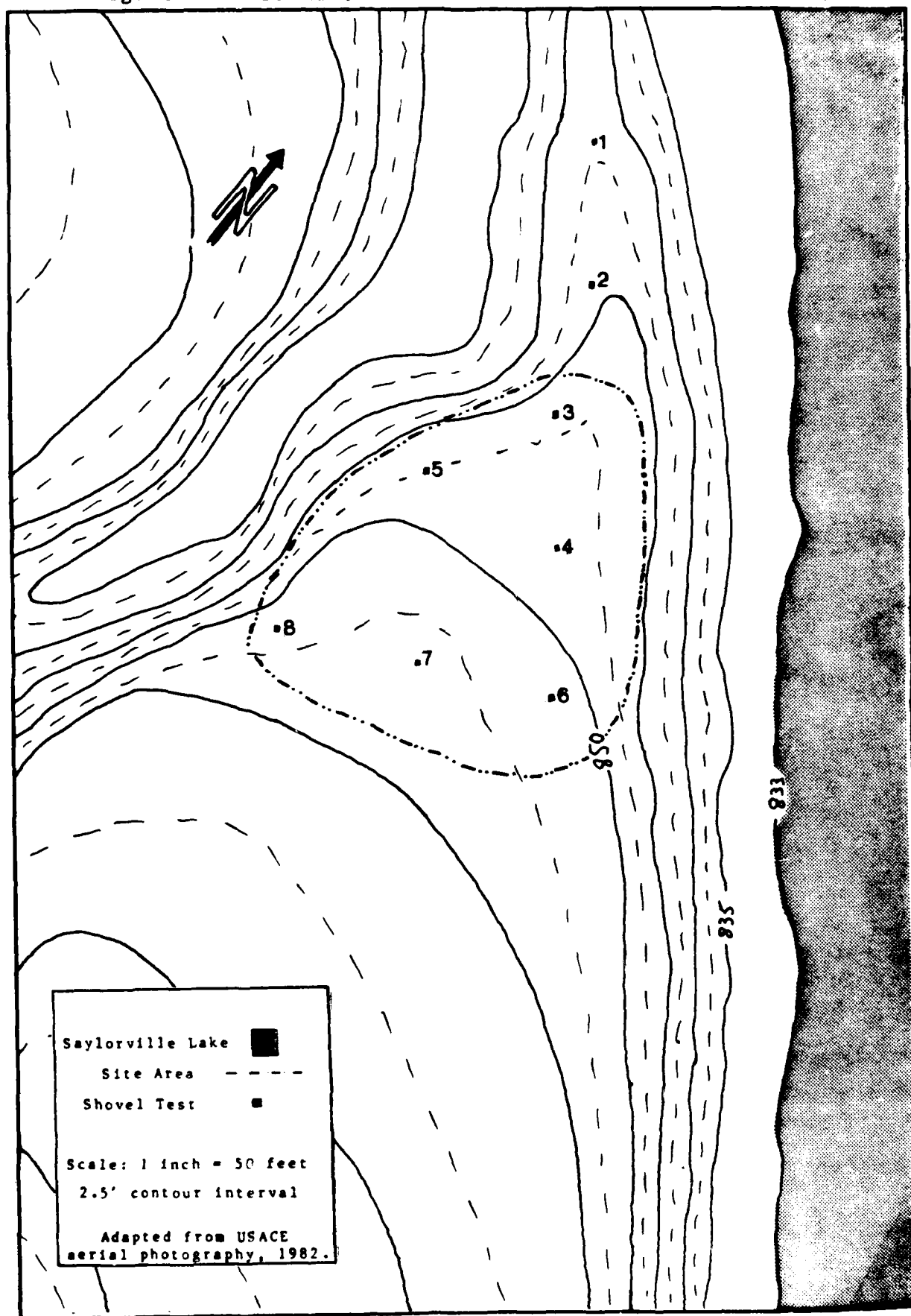
Shovel Test #6
0-10 cm 1 primary flake
10-20 cm 1 secondary flake

Shovel Test #7
0-10 cm 1 secondary flake
20-30 cm 1 secondary flake
1 primary flake
1 piece fire-cracked rock
30-40 cm 1 secondary flake

Shovel Test #8
0-10 cm 2 secondary flakes
10-20 cm 5 secondary flakes
1 piece fire-cracked rock
20-30 cm 1 secondary flake
1 retouch flake
30-40 cm 1 secondary flake
1 retouch flake

The landform upon which this site lies is a very narrow finger-like peninsula, bordered on one side by Saylorville Lake

Figure 21. 13PK275



and on another by a steep-sided inlet which separates 13PK275 from 13PK288. Very little surface material was found on this peninsula during resurvey, and shovel testing showed that soil erosion has been quite severe - not much of the topsoil remains intact. To the west, this peninsula widens out into a level, broad terrace which, based on the results of subsurface testing, is the actual occupation area (see Plate I-18).

Since this portion of the lakeshore has not been as badly affected by bank slumpage as many other locations, it is possible that most of the site area does remain intact. The sparse distribution of subsurface materials suggests that the site was neither a large nor a long-term occupation. The only artifact from this site which would allow for any more precise estimation of site function or cultural affiliation is a projectile point of probable Early Woodland affiliation which was recovered by ISU during initial survey (see Plate II-8).

13PK276

Location: on an alluvial fan, now on the west shore of Saylorville Lake, south of the Polk City High Bridge.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 9-27-76.

Testing Procedure: surface reconnaissance, cutbank planing, 8 shovel tests.

Material Recovered: Surface
 1 core nodule
 3 core fragments
 2 primary flakes
 5 secondary flakes

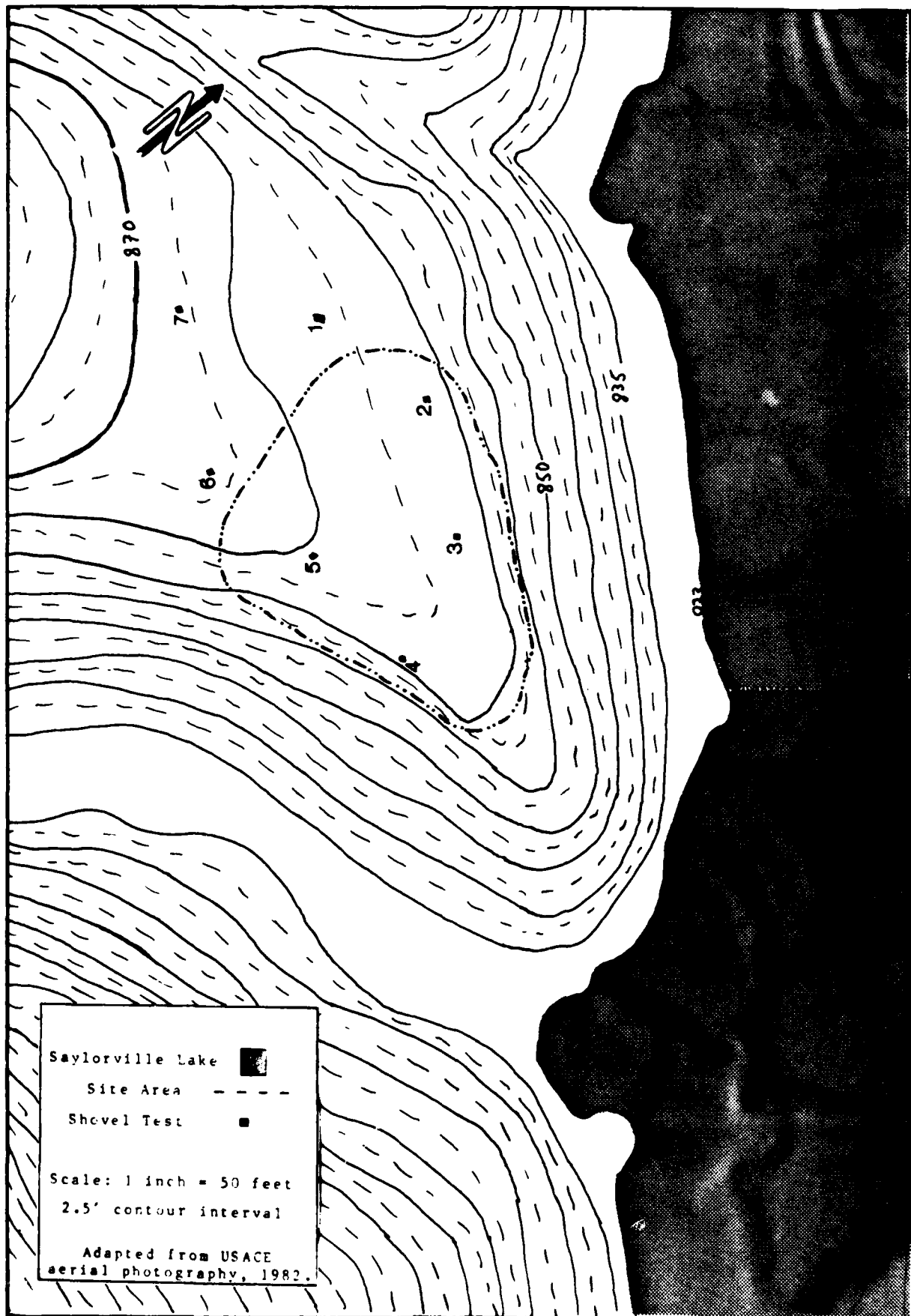
Shovel Test #3
20-30 cm 1 core fragment

Shovel Test #4a
20-30 cm 1 primary flake
 5 secondary flakes
30-40 cm 1 secondary flake

Shovel Test #4b
0-10 cm 1 secondary flake
 1 retouch flake
10-20 cm 1 primary flake
 2 secondary flakes
 1 retouch flake
20-30 cm 3 retouch flakes
30-40 cm 2 secondary flakes

Shovel Test #5
0-10 cm 2 secondary flakes

Figure 22. 13PK276



Shovel Test #5, cont.

0-10 cm 1 bone fragment
10-20 cm 2 secondary flakes
1 piece fire-cracked rock

Shovel Test #6

0-10 cm 1 projectile point tip
1 primary flake
10-20 cm 3 secondary flakes
20-30 cm 3 secondary flakes

13PK276 is situated on an alluvial fan approximately 20' above the Saylorville Lake conservation-pool level. The steep slopes which once bordered the terrace have been made almost vertical in places by slumpage off the face of the slope (see Plate I-19). It is probable that a portion of the original site area has thus been destroyed, a supposition supported by the presence of cultural materials on the face of the cutbank. However, subsurface testing on the terrace did indicate that much of the cultural horizon remains intact, apparently disturbed only by the tree-clearing operations conducted in 1976.

No artifacts were recovered from this site which would allow for a determination of cultural affiliation. However, the large quantity of lithic debitage recovered, combined with a number of unworked or partially reduced core nodules, suggests that it may have been the location of tool-manufacturing activities.

13PK277

Location: on the floodplain of the Des Moines River, now on the west shore of Saylorville Lake, north of the Lakeview Recreation Area.

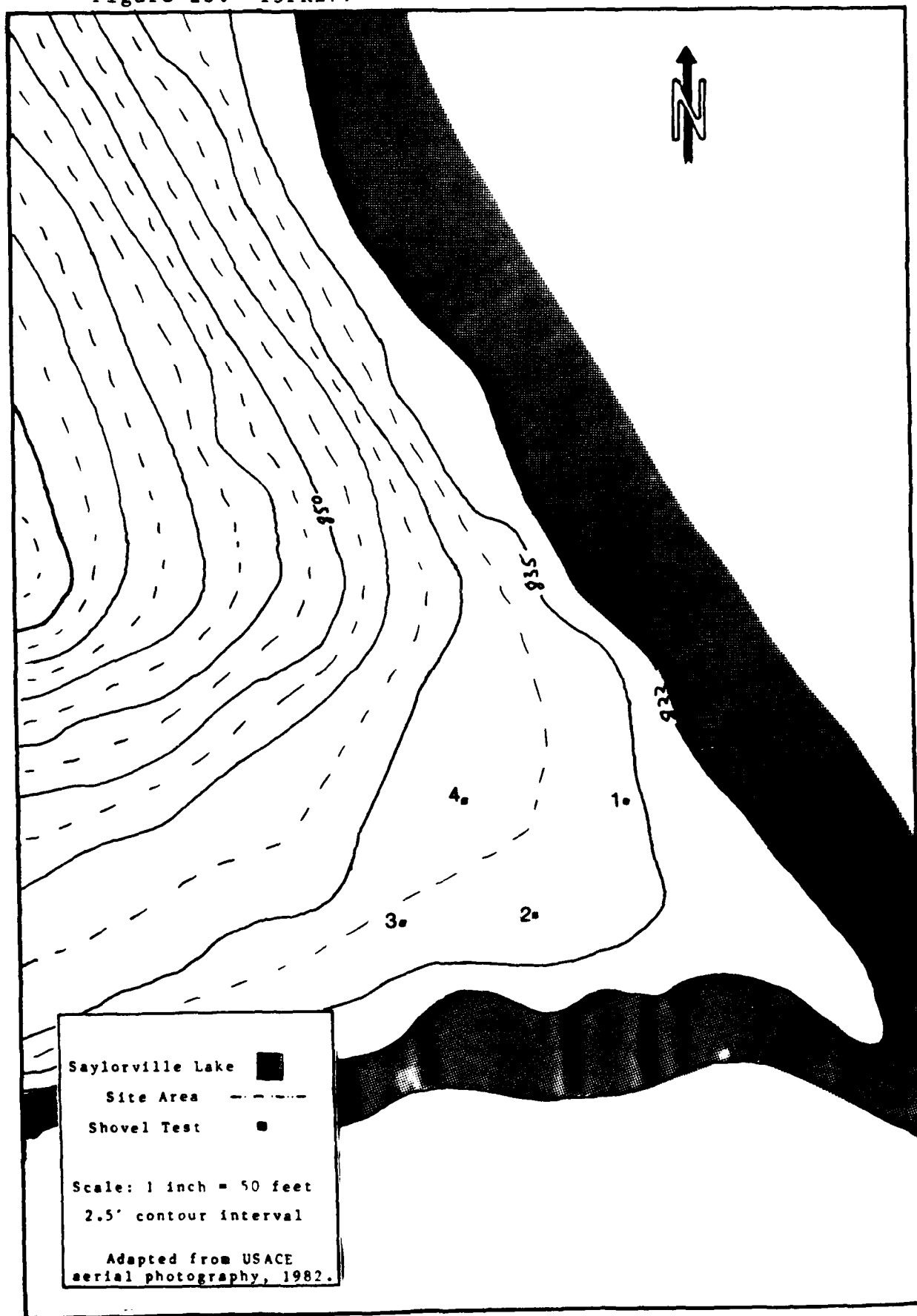
Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 9-28-76.

Testing Procedure: surface reconnaissance, 4 shovel tests.

Material Recovered: Surface
5 core fragments
6 secondary flakes
1 turtleback scraper
2 grit body sherds, incised

When ISU defined this site, they indicated that it would probably be destroyed when waters were impounded in Saylorville Lake. It appears that this was indeed the case, since the only evidence of the existence of 13PK277 that was found during resurvey was the sparse cultural material listed above. All of these artifacts were found along the waterline or just offshore, in a few inches of water. Wave action in this area is particularly intense due to the presence of a nearby breakwater, which disrupts the normal pattern of wave motion along the

Figure 23. 13PK277



shoreline. Subsurface tests done in the area revealed that a considerable amount of sediment has also built up in this location, at the confluence of the lakeshore and a small stream which runs through the inlet on the southern boundary of the site (see Plate I-20).

The body sherds that were recovered from this site are all quite small and rather eroded; traces of incising can be made out, but no pattern distinctive enough to assign typological classification can be discerned. ISU did recover one partial projectile point from this site during initial survey (see Plate II-11). An Early Middle Woodland designation can be hypothesized for the site on the basis of the general form of this artifact.

13PK279

Location: on an alluvial fan, now on the west shore of Saylorville Lake, north of the Lakeview Recreation Area.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 10-1-76.

Testing Procedure: surface reconnaissance, 3 shovel tests.

Material Recovered:

Surface

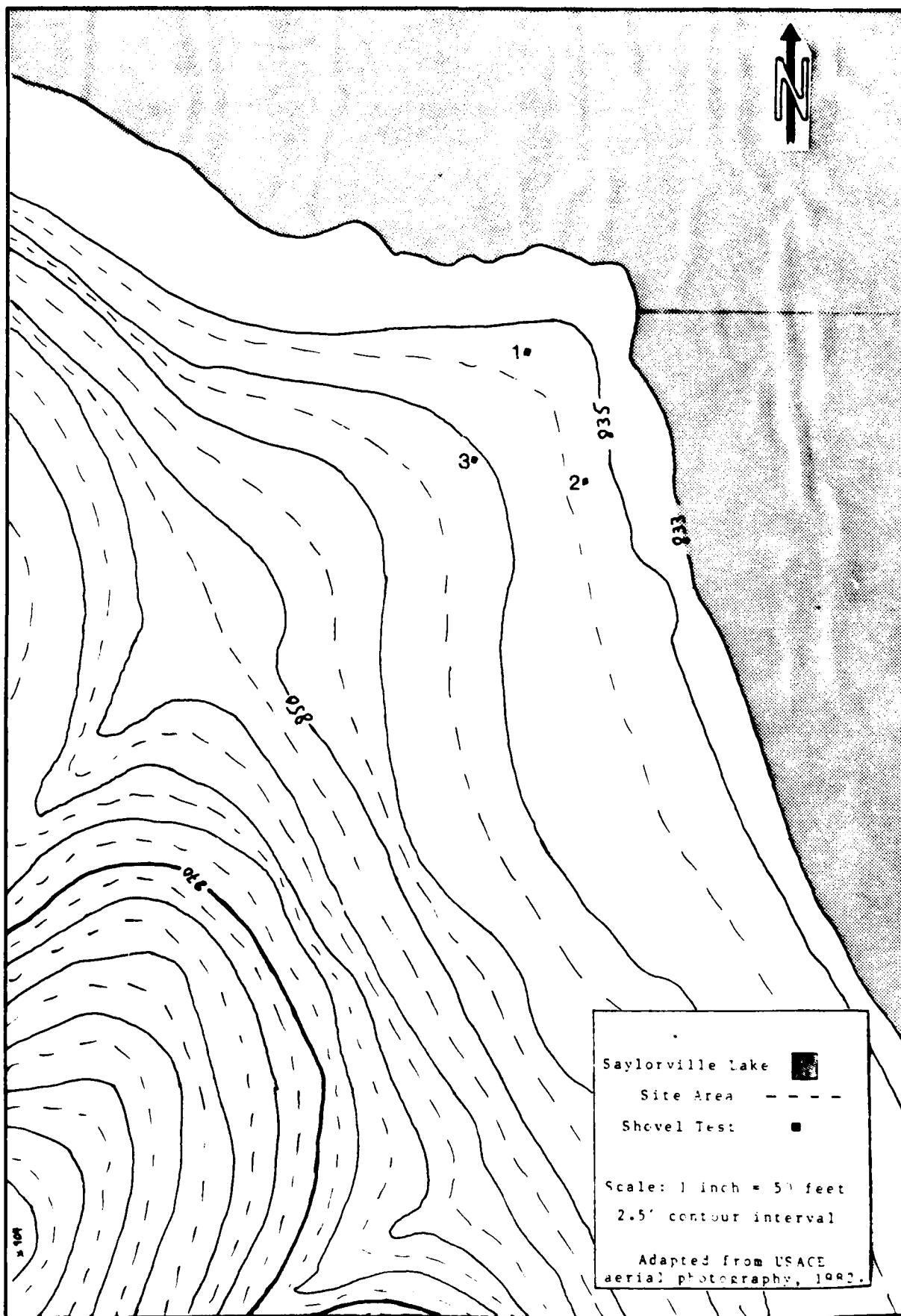
- 3 core fragments
- 1 primary flake
- 13 secondary flakes
- 1 projectile point tip
- 1 handblown clear glass bottle (pre-1903)
- 1 piece historic ceramic bowl
- 1 piece metal hone
- 1 piece metal harness

The surface material recovered from 13PK279 during resurvey was concentrated almost entirely along the footslope on the western border of the site area, and shovel testing on the fan itself revealed no evidence of an intact cultural horizon. Most of the fan seemed to consist of relatively recent sediments, and disturbance of soil stratigraphy in this location (perhaps by recent earth-moving activities) is evidenced by recent historic debris which was found at 20-30 cm in Shovel Test #2. It seems likely that the recovered material had eroded down the slope from a site on the upland ridge above - the projectile point, as an example, was found in the middle of a small drainage which runs down the footslope and across the fan. It therefore seems quite probable that the surface materials used to define this site originally were also redeposited from above, and no actual site exists at this location (see Plate I-21).

13PK285

Location: above the floodplain of the Des Moines River, now on the west shore of Saylorville Lake, south of the Polk City High

Figure 24. 13PK279



Bridge.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 10-21-76.

Testing Procedure: surface reconnaissance, cutbank planing, 10 shovel tests.

Material Recovered: Surface
1 core fragment
1 primary flake
10 secondary flakes
1 broken projectile point, corner-notched
2 groundstone tools
2 grit rim sherds (smooth; cr w/bosses)
4 grit body sherds, eroded

Shovel Test #4
0-10 cm 1 retouch flake
20-30 cm 1 secondary flake

Shovel Test #8
0-10 cm 1 secondary flake

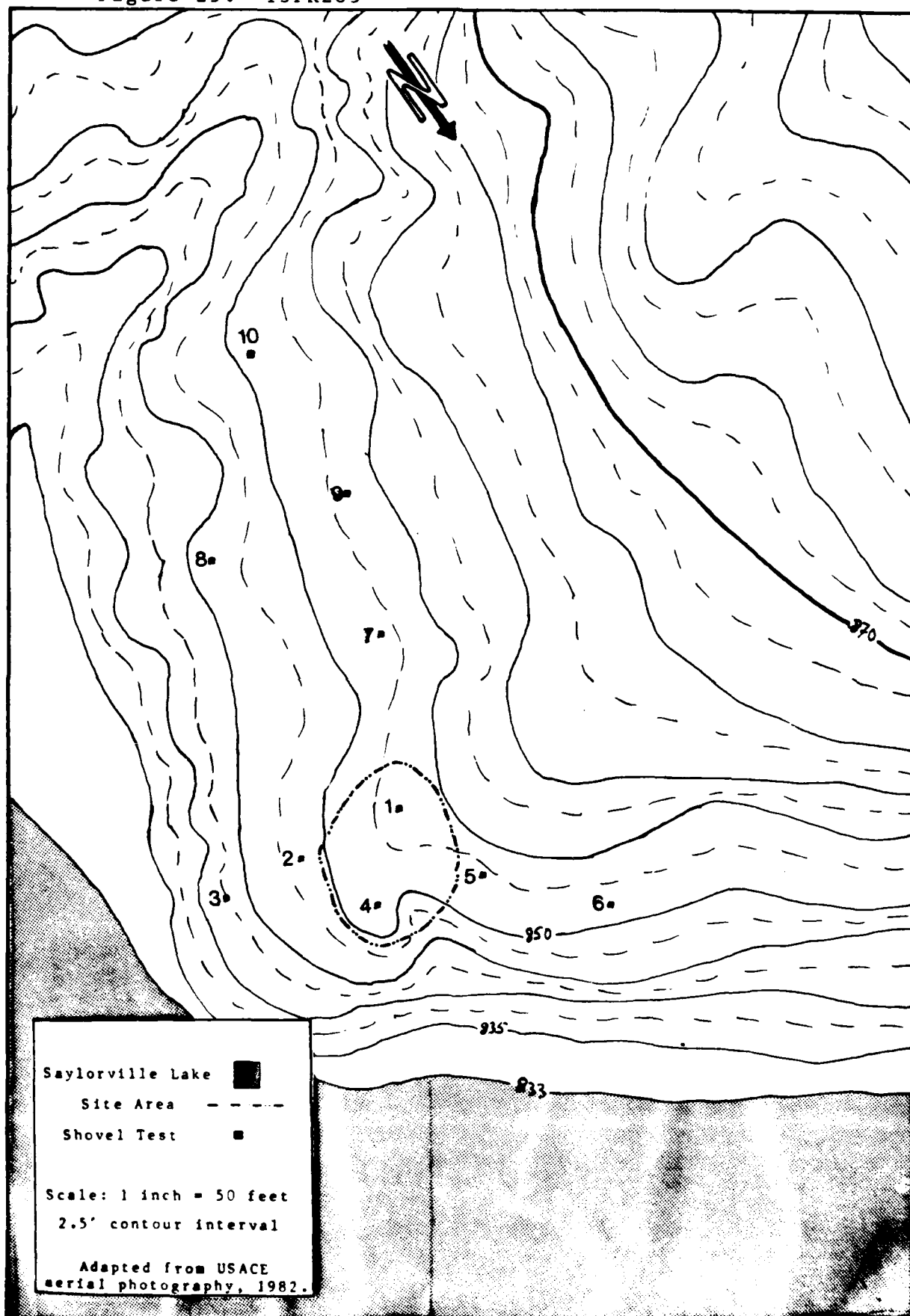
The present condition of 13PK285 is one of the most clear-cut examples of bank slumpage observed during this project. The southern border of the site area, which was previously a relatively gradual slope from an upland ridge to an inlet, is now a steep, terraced escarpment. Near the waterline, the soil has been eroded away to the point where the zone of decomposition immediately above the shale bedrock is exposed.

The distribution of surface materials found at this site during resurvey gives evidence of the action of water (and ice) in redistributing cultural materials. As Plate I-22 shows, most of the artifacts collected from surface were found along a very consistent contour along the southern edge of the site. Virtually all of the surface artifacts were found within less than 1 meter of this contour. This distribution may have resulted from the deposition of artifacts by receding waters; it may also reflect the action of ice shove along the shoreline.

The placement of subsurface tests at this site was dictated by the pattern of erosion. Shovel tests were done in the areas where soil strata appeared to be most intact, particularly along a series of small finger ridges or "micro-terraces" on the southern side of the site. The site area as shown on the accompanying map is defined on the basis of the only subsurface material found during shovel testing. It is assumed that this is the final remnant of the original site area, the remainder having already eroded away.

The few diagnostic artifacts found at 13PK285 were all

Figure 25. 13PK285



recovered from surface along the southern site boundary. These include a large rim sherd with distinctly Havanoid characteristics, which is shown in Plate II-14.

13PK286

Location: on an upland ridge above the Des Moines River Valley, now on the western shore of Saylorville Lake, south of the Polk City High Bridge.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 10-24-76.

Testing Procedure: surface reconnaissance, cutbank planing, 6 shovel tests.

Material Recovered: Surface
2 core fragments
3 secondary flakes

Shovel Test #1
0-10 cm 1 secondary flake
10-20 cm 1 secondary flake
20-30 cm 1 secondary flake

Shovel Test #5
0-10 cm 1 secondary flake
10-20 cm 1 secondary flake
30-40 cm 2 secondary flakes
1 primary flake

13PK286 lies on a high terrace remnant, bounded on the east by a steep cutbank approximately 20' high. The location of the site in relation to the old river channel and the configuration of the shoreline in this area have made this site quite susceptible to bank slumpage (see Plate I-23). Subsurface testing along the leading edge of the terrace indicated that a very small portion of the original site area is still intact. However, it is likely that what does remain of this site will not long survive the continuous action of waves undercutting the base of the escarpment.

No materials suggestive of cultural affiliation or site function were recovered from this site when it was initially located or during resurvey.

13PK288

Location: on a low prairie terrace, now on the western shore of Saylorville Lake, south of the Polk City High Bridge.

Previous Research: defined by ISU personnel during monitoring of construction activity; no subsurface testing; state site form

Topographic map of the Saylorville Lake area. The map shows contour lines with a 2.5-foot interval. The lake is on the left, and the land is on the right. A site area is indicated by a dashed line, and a shovel test location is marked with a solid line. The map includes a legend, scale, and source information.

Legend:

- Saylorville Lake
- Site Area
- Shovel Test

Scale: 1 inch = 50 feet
2.5' contour interval

Adapted from: USACE aerial photography, 1982.

dated 10-24-76.

Testing Procedure. surface reconnaissance, cutbank planing, 5 shovel tests, 2 auger tests.

Material Recovered:

Surface

- 1 core nodule
- 4 primary flakes
- 17 secondary flakes
- 1 thumbnail scraper
- 1 flake tool
- 1 retouch flake
- 1 projectile point tip
- 1 broken tool base
- 4 grit body sherds, eroded
- 3 ceramic crumbs

Shovel Test #3

0-10 cm 1 secondary flake

Shovel Test #5

0-10 cm 1 primary flake

6 grit body sherds, eroded

10-20 cm 1 grit body sherd, eroded

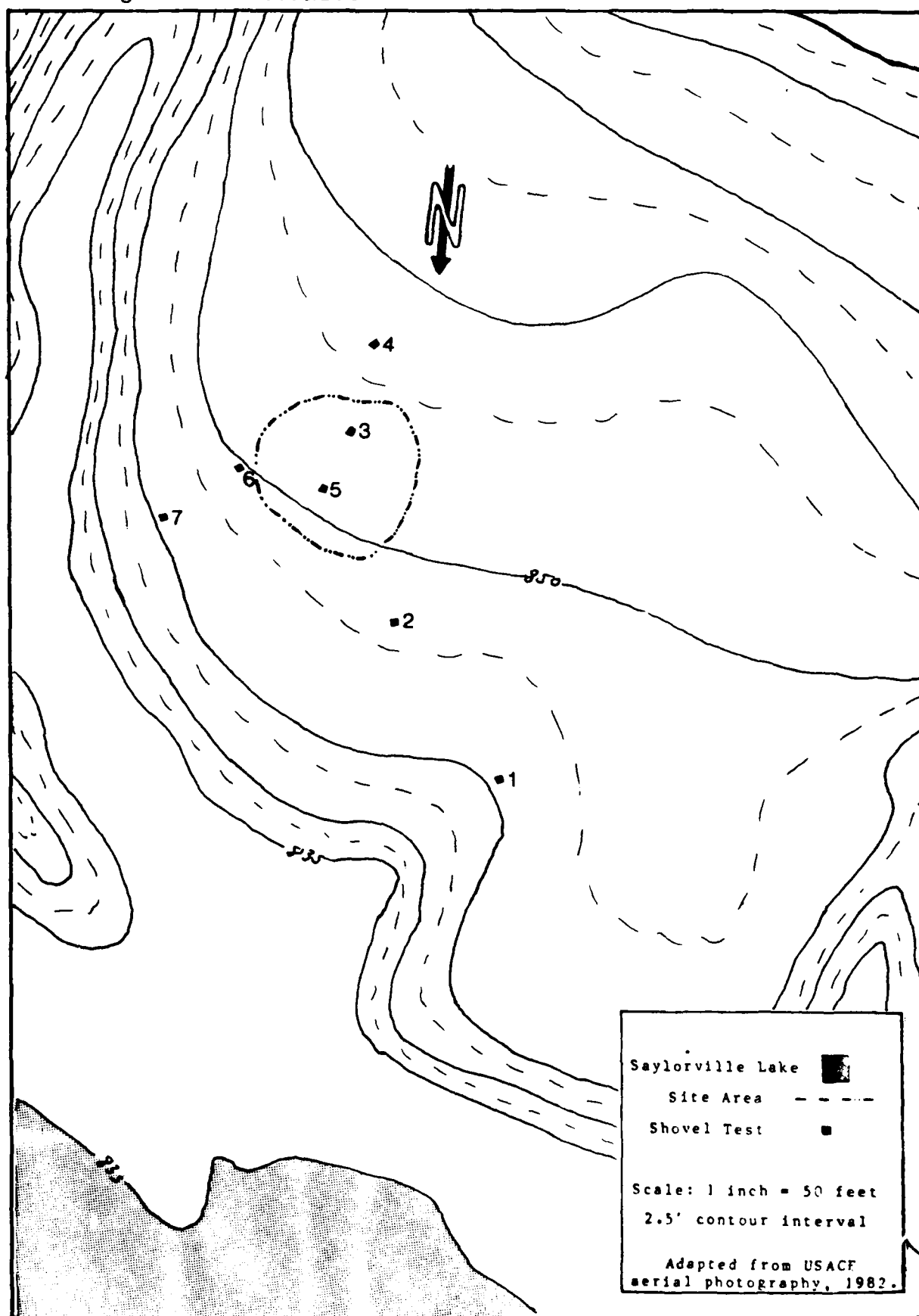
20-30 cm 1 secondary flake

The terrace on which this site is located exemplifies another of the landscape-alteration processes in action at Saylorville Lake. The terrace apparently was once a continuous, relatively level stretch of land, but is now bisected by a steep-sided, narrow inlet which separates 13PK288 from 13PK275. During the summer of 1982, the sides of this inlet were "stepped" in a series of small ridges created by receding waters (see Plate I-24).

Much of the artifactual material recovered from 13PK288 was found along the slope itself, from the terrace top down to the waterline. Subsurface testing showed that while the edges of the site had been badly eroded, the interior portion was buried under a considerable accumulation of sediment. (The auger was used for several tests in this area because of the depth of the sedimentation.) The ceramics found in Shovel Test #5 were so badly degraded by inundation that they were just barely distinguishable from the surrounding soil matrix.

The presence of ceramics at this site allows an automatic presumption of generalized Woodland cultural affiliation, although the sherds were too badly degraded to make any further analysis possible. One projectile point which resembles Snyder's variants in form but not in size was also recovered (see Plate II-8). The possibility does exist that 13PK288 and 13PK275 were originally one site, now bisected by an incised inlet. However, further examination of this possibility would require much more extensive investigation of local land-alteration episodes than was possible during the course of this project.

Figure 27. 13PK288



13PK313

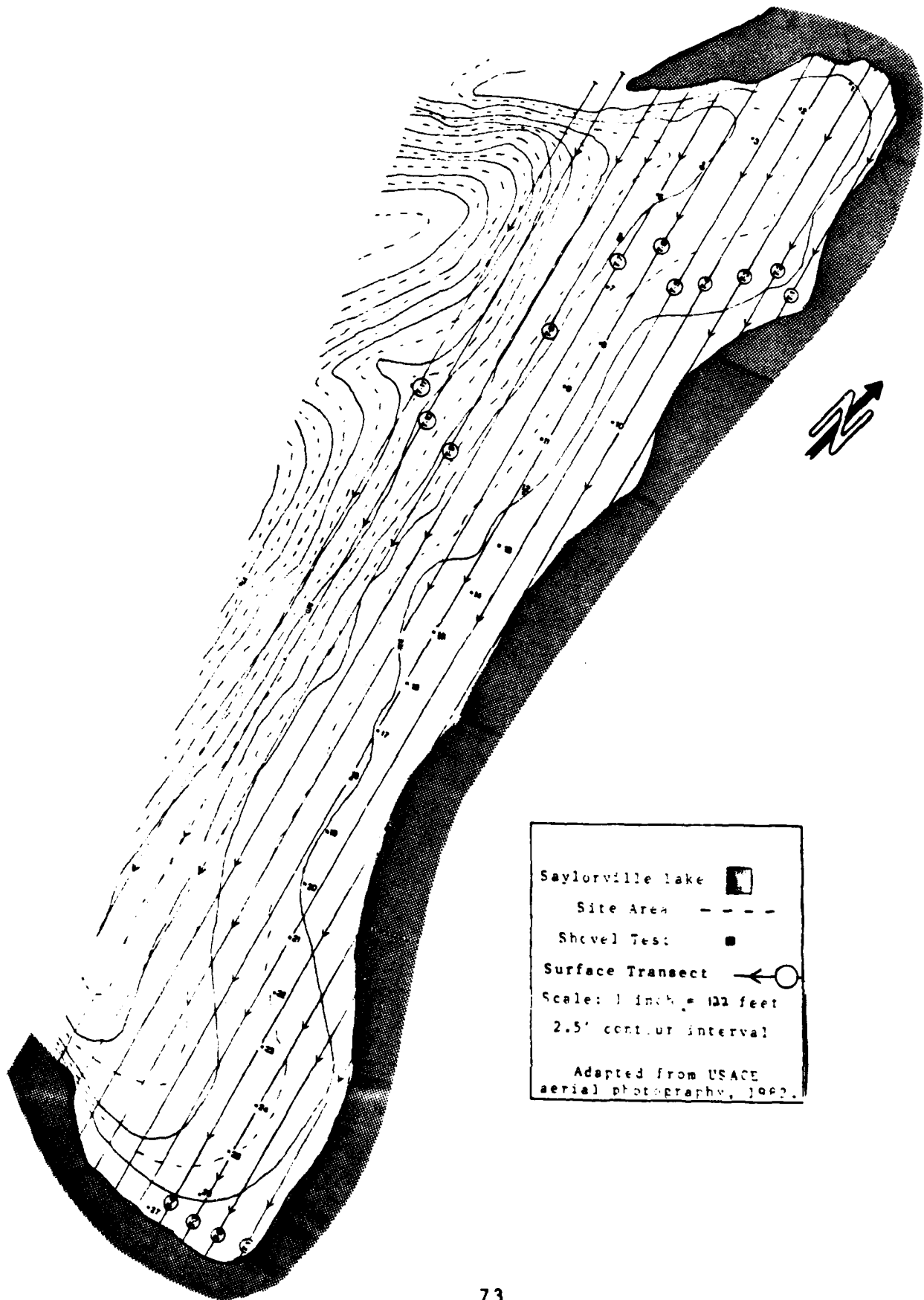
Location: on an alluvial fan, now on the west shore of Saylorville Lake, north of the Lakeview Recreation Area.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 4-15-80.

Testing Procedure: surface reconnaissance (transects), 27 shovel tests.

| Material Recovered: | <u>Surface</u> |
|---------------------|---|
| General: | 1 core fragment 1 primary flake 15 secondary flakes 3 projectile points (corner-notched; side-notched) |
| Transect 1: | 2 primary flakes 7 secondary flakes 1 grit body sherd, eroded |
| Transect 2: | 5 core fragments 3 primary flakes 12 secondary flakes 1 projectile point base, side-notched 1 broken projectile point, triangular |
| Transect 3: | 1 core fragment 1 primary flake 10 secondary flakes |
| Transect 4: | 1 core fragment 4 primary flakes 7 secondary flakes 1 side scraper 1 triangular scraper 1 grit body sherd, eroded |
| Transect 5: | 1 core fragment 2 primary flakes 8 secondary flakes |
| Transect 6: | 1 primary flake 4 secondary flakes 1 bifacial scraper 1 end scraper 1 projectile point, triangular |
| Transect 7: | 3 secondary flakes |
| Transect 8: | 1 secondary flake |
| Transect 9: | 1 core fragment 1 primary flake 5 secondary flakes |
| Transect 10: | 1 primary flake 8 secondary flakes 1 thumbnail scraper |
| Transect 11: | 2 secondary flakes |
| | <u>Shovel Test #1</u> |
| 30-40 cm | 1 secondary flake |

Figure 28. 13PK313



Shovel Test #2
0-10 cm 1 secondary flake

Shovel Test #10
30-40 cm 2 secondary flakes

Shovel Test #15
10-20 cm 1 secondary flake

Shovel Test #22
18 cm 1 secondary flake

The site area recorded for 13PK313 by ISU was by far the largest area that had to be resurveyed during this project - approximately 8 acres. Initially, the site had been defined as covering the entire area between two large inlets which flow into Saylorville Lake. Since no indication was given of exactly where within that area surface materials were concentrated, the testing procedures applied during resurvey were focused, first of all, on defining areas of concentration, so as to perhaps narrow the area to be examined.

In order to accomplish this goal, a transect surface reconnaissance method was used. Crew members walked surface transects at an interval no greater than 10 meters. Each transect was walked first from the north end of the site area to the south end. All artifacts noticed on surface were collected, and pinflags were used to mark their locations. After this was done, each transect was re-examined, moving from south to north, again marking the location of any additional artifacts found. This procedure revealed no areas of significant artifact concentration - the only significant variation in distribution noted was a slight decline in artifact densities as one moved from the lakeshore towards the footslope on the western edge of the site area. It appeared that the distribution of artifacts on the surface of this site was more a function of inundation and wave action than a reflection of cultural processes.

A series of shovel tests were then done down the length of the site area. These tests showed that disruption of soil strata has been rather severe; very little of the A horizon remains intact, and in many shovel tests, the soils encountered appeared to be recent sediments. It is probable that virtually all of the subsurface cultural materials were in secondary deposition (see Plate I-25).

At this time, it is no longer possible to determine if the entire length of the alluvial fan does indeed represent a single site area, as originally defined, or to reach any conclusion regarding probable site function. Based on considerations of topography, it is possible to hypothesize that this "site" is similar to 13PK314, discussed below, in that it actually consists of more than one discrete occupation area. The diagnostic artifacts found during surface reconnaissance fall into two distinct groups: two Archaic forms and three Late

Woodland/Mississippian forms (see Plates II-7 and II-9).

13PK314

Location: on an alluvial fan, now on the west shore of Saylorville Lake, north of the Lakeview Recreation Area.

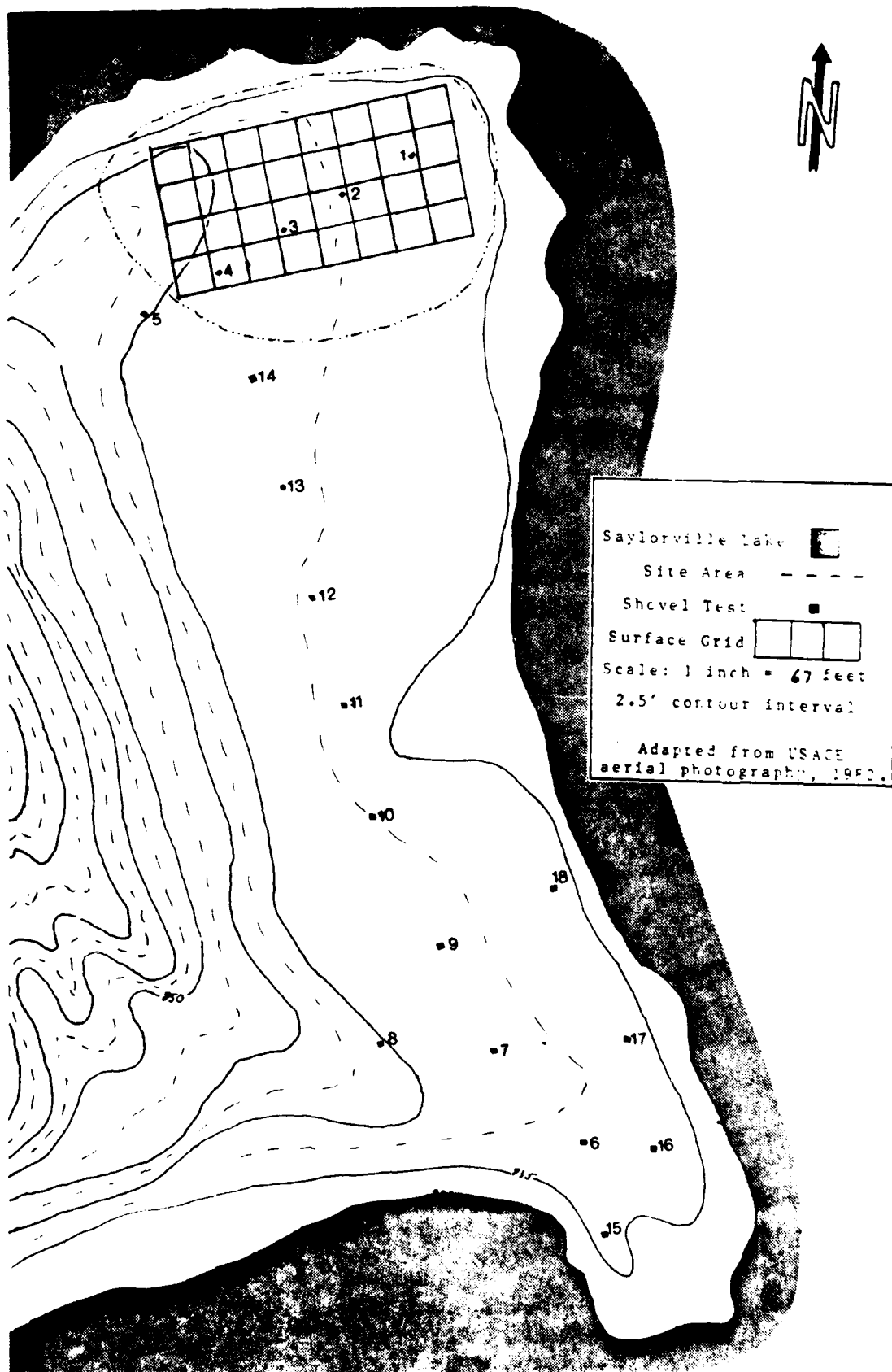
Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 4-14-80.

Testing Procedure: surface reconnaissance (grids), 17 shovel tests.

Material Recovered: Surface

| | |
|------------|-----------------------------------|
| North end: | 7 core fragments |
| | 3 primary flakes |
| | 36 secondary flakes |
| | 2 pieces fire-cracked rock |
| | 4 grit body sherds, smooth |
| | 18 grit body sherds, cr |
| | 31 grit body sherds, eroded |
| | 6 grit rim sherds, cord-impressed |
| | 11 ceramic crumbs |
| | 1 historic bullet fragment |
| Grid 1: | 1 core nodule |
| | 3 primary flakes |
| | 14 secondary flakes |
| | 1 projectile point, lanceolate |
| | 12 grit body sherds, eroded |
| | 2 grit body sherds, cr |
| | 7 ceramic crumbs |
| Grid 2: | 1 secondary flake |
| Grid 3: | 1 core fragment |
| | 2 primary flakes |
| | 3 secondary flakes |
| | 1 grit body sherd, eroded |
| Grid 4: | 1 secondary flake |
| Grid 5: | 15 secondary flakes |
| Grid 6: | 2 primary flakes |
| | 4 secondary flakes |
| | 1 rodent jaw fragment w/incisor |
| Grid 7: | 2 primary flakes |
| | 17 secondary flakes |
| | 2 grit body sherds, cr |
| | 3 grit body sherds, eroded |
| Grid 8: | 3 secondary flakes |
| Grid 9: | 12 secondary flakes |
| | 10 grit body sherds, eroded |
| Grid 10: | 1 bifacial scraper |
| | 2 grit body sherds, eroded |
| Grid 11: | 7 secondary flakes |
| | 4 ceramic crumbs |
| Grid 12: | 1 primary flake |
| | 2 secondary flakes |

Figure 29. 13PK314



Surface, cont.

Grid 13: 1 secondary flake
Grid 14: 3 primary flakes
4 secondary flakes
2 grit body sherds, cr
Grid 15: 1 primary flake
3 secondary flakes
Grid 17: 2 secondary flakes
Grid 18: 6 secondary flakes
1 grit body sherd, cr
2 grit body sherds, eroded
Grid 19: 1 secondary flake
1 body sherd, eroded
Grid 20: 2 secondary flakes
Grid 23: 1 core fragment
2 secondary flakes
Grid 26: 1 primary flake
2 secondary flake
1 grit body sherd
Grid 27: 1 primary flake
Grid 28: 5 secondary flakes
South end: 5 core fragments
12 primary flakes
66 secondary flakes
1 ground hammerstone
1 knife base
1 projectile point, corner-notched
1 scraper
38 grit body sherds, smooth
83 grit body sherds, eroded
38 grit body sherds, cr
68 ceramic crumbs
13 grit rim sherds
6 grit neck sherds
1 historic gopher trap

Shovel Test #1

0-10 cm 2 secondary flakes
10-20 cm 1 " "

Shovel Test #2

0-10 cm 1 secondary flake
10-20 cm 3 " "
20-30 cm 2 " "

Shovel Test #4

0-10 cm 1 secondary flake
10-20 cm 1 " "
20-30 cm 6 " "

Shovel Test #11

20-30 cm 2 secondary flakes

Shovel Test #12

0-10 cm 1 secondary flake

Shovel Test #15
10-20 cm 2 secondary flakes
30-40 cm 1 " "

Shovel Test #16
20-30 cm 1 core fragment

The alluvial fan upon which this site is located is approximately 175 meters long; the original site definition indicates that the entire fan is the site area. However, the distribution of cultural materials recovered both on surface and in subsurface tests was in very definite areas of concentration at the very south end and the very north end of the existing terrace formation. There was a conspicuous lack of material in the narrow bench between these two areas. This suggests that what was originally defined as one site actually consists of two separate occupation areas.

When the site was resurveyed, surface reconnaissance began at the north end of the defined site area. Because there appeared to be a relatively heavy concentration of surface material, a 5-meter grid was laid out over the area, and surface materials were collected separately from each grid (as indicated above). The site was revisited on several occasions, and each time more material was recovered from surface at this end of the terrace. Although there was a definable area within which most of the material was found, water-level fluctuations of a few inches continually created new areas of surface concentration within this general area of occurrence. Consistent surface concentrations thus could not be defined over the course of several visits. This is reflective of the speed with which artifacts can be relocated by wave action, almost on a day-to-day basis.

When the south end of the site area was first examined, the lake level was still slightly higher than normal. Only a few artifacts were found on surface in this vicinity, and shovel tests yielded very little subsurface material. However, on a subsequent visit, the water level had receded to its normal elevation, and a larger portion of the fan was exposed. The large quantities of ceramic artifacts listed above were collected at this time. Many sherds were found still partially within the soil matrix (see Plate I-26).

The pattern of soil erosion at 13PK314 is very complex. At the northern end, sheet erosion seems to have been the major action, so that there has been consistent removal of the horizontal cultural component. At the southern end, variable erosion has created a pattern of micro-terrace remnants of a few meters or less in size. The variations in elevation created by these remnants are very small in magnitude - averaging perhaps 30 to 50 centimeters. They are, however, large enough to have eliminated significant portions of the cultural horizon in this area.

The many diagnostic artifacts recovered from this site should be discussed in terms of the two postulated occupation areas at the far northern and far southern ends of the fan. There are differences in the quantities and kinds of artifacts found in the two areas: a much higher frequency of relatively well-preserved, large ceramic sherds at the south end, for instance. Despite these differences, the materials recovered in both areas are suggestive of established habitations. There is a very definite consistency to the decorative motifs observed on the ceramic sherds: horizontal and oblique patterns of single cord impressions just below a straight or slightly flaring lip. These sherds appear to combine characteristics of a number of Late Woodland ceramic types defined in regions both to the east and to the west of the Saylorville Project Area (see Plates II-8, II-9, II-11, II-13, II-15, II-18, II-19, II-20).

13PK315

Location: on an alluvial fan, now on the west shore of Saylorville Lake, north of the Lakeview Recreation Area.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 4-14-80.

Testing Procedure: surface reconnaissance, cutbank planing, 11 shovel tests.

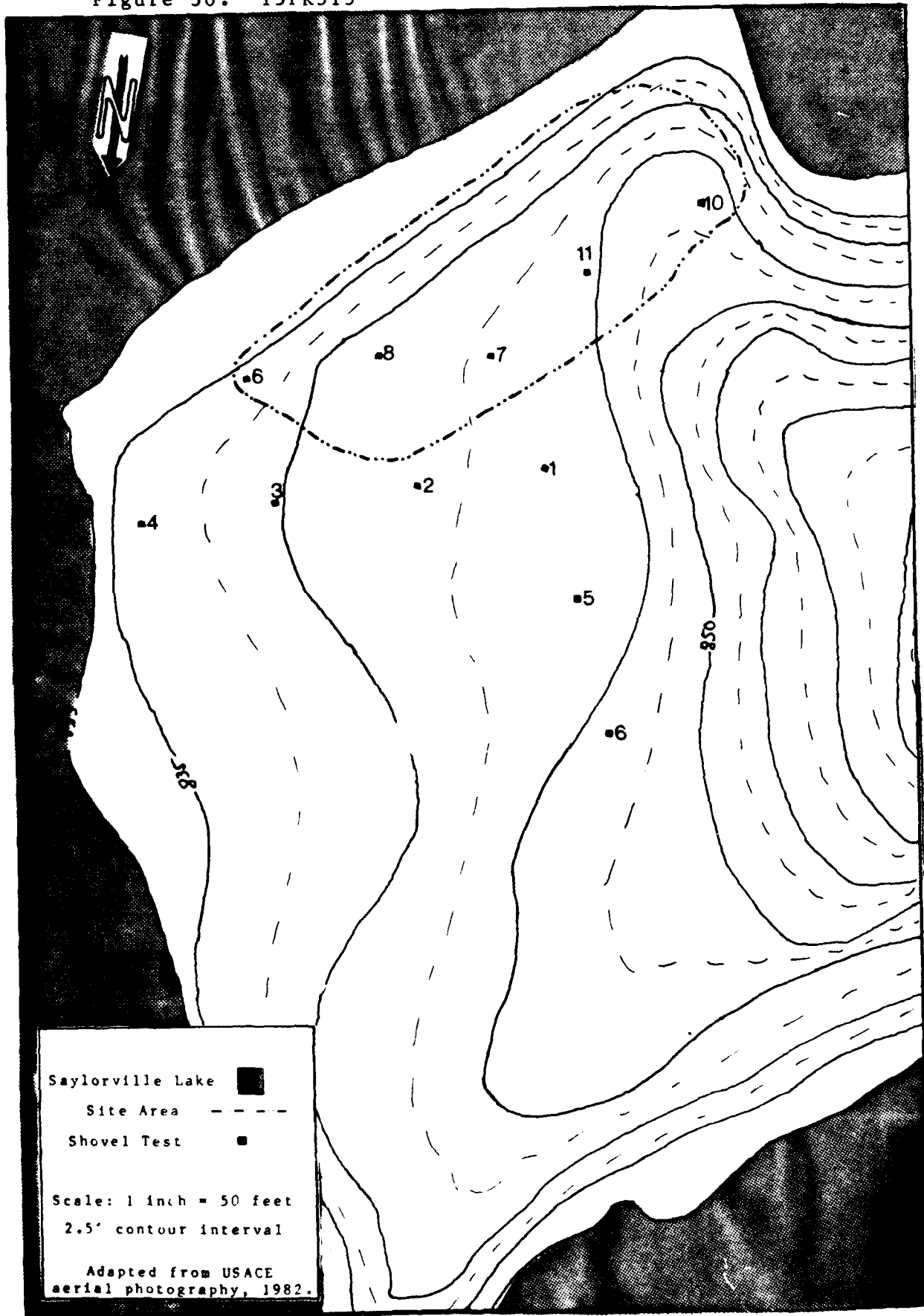
Material Recovered: Surface
 16 core fragments
 36 primary flakes
 271 secondary flakes
 11 retouch flakes
 4 projectile points
 3 broken tools
 2 preforms
 10 scrapers
 2 flake tools
 1 body sherd, cr
 2 historic handmade clay pipe sherds

Shovel Test #7
 0-10 cm 1 secondary flake

Shovel Test #8
 0-10 cm 1 secondary flake
 10-20 cm 1 retouch flake
 20-30 cm 1 secondary flake

Shovel Test #10
 0-10 cm 1 primary flake
 4 secondary flakes
 10-20 cm 2 secondary flakes
 1 broken tool base
 1 body sherd, cr

Figure 30. 13PK315



Shovel Test #10, cont.

20-30 cm 1 primary flake
 1 secondary flake
30-40 cm 1 primary flake

Shovel Test #11

0-10 cm 1 retouch flake
 18 secondary flakes
10-20 cm 16 secondary flakes
 1 retouch flake

20-30 cm 10 secondary flakes
 1 primary flake
30-40 cm 2 secondary flakes
40-50 cm 2 secondary flakes

The configuration of surface and subsurface materials at 13PK315 is somewhat reminiscent of the situation at 13PK274: most of the surface material was recovered from the cutbank on the south side of the site area, just above a wide, deep inlet. Subsurface testing revealed that the horizontal extent of the site is rather narrow (not more than 35 meters north to south), concentrated especially in the southwestern corner of the terrace - the location of Shovel Tests #9, #10 and #11 (see Plate I-27).

Within the remaining portion of the original site area, the vertical site component remains essentially intact, only slightly disrupted by erosion and tree-clearing operations. A few ceramic sherds were found on surface and in subsurface context, but they are not indicative of any particular cultural affiliation, other than a generalized Woodland association. The projectile points found at this site are, for the most part, suggestive of Early to Middle Woodland forms. The exception to this is a Madison point which was found on the surface of the footslope which forms the western boundary of the site. This point appears to have been deposited there either by downslope erosion of topsoil or by rising or falling waters during a high-water episode. It thus does not conflict to any extent with the temporal classification suggested by the other materials found at this site (see Plates II-7, II-8, II-9, II-12, II-13, II-22, II-24).

13DA9

Location: on the floodplain of the Des Moines River, now on the west shore of Saylorville Lake, northwest of the Highway 17 bridge.

Previous Research: recorded by Ashworth & McKusick (1964:11) on the basis of information obtained from landowner; tested by Smithsonian River Basin Survey (Brown 1966:18); tested by Iowa State University (Gradwohl & Osborn 1973:26, 1975:121, Gradwohl 1975:194-196).

Testing Procedures: surface reconnaissance, cutbank planing, 17 shovel tests, 5 auger tests.

AD-A135 056

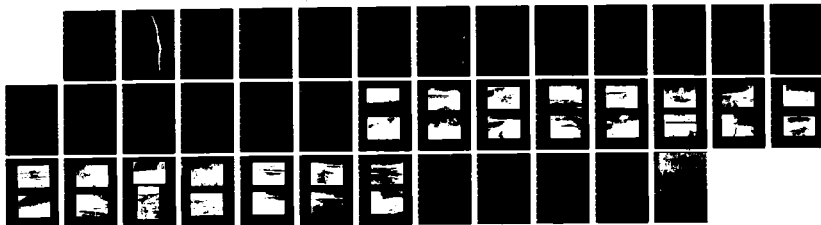
RESURVEY AND INTENSIVE TESTING OF ARCHAEOLOGICAL SITES
AT SAYLORVILLE LAK. (U) IMPACT SERVICES INC MANKATO MN
P M EMERSON ET AL. JUL 83 DACW25-82-C-0068

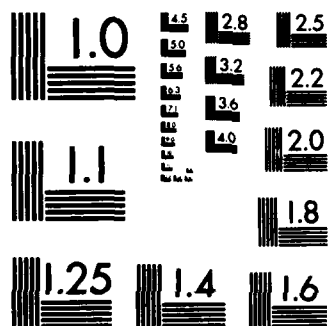
2/2

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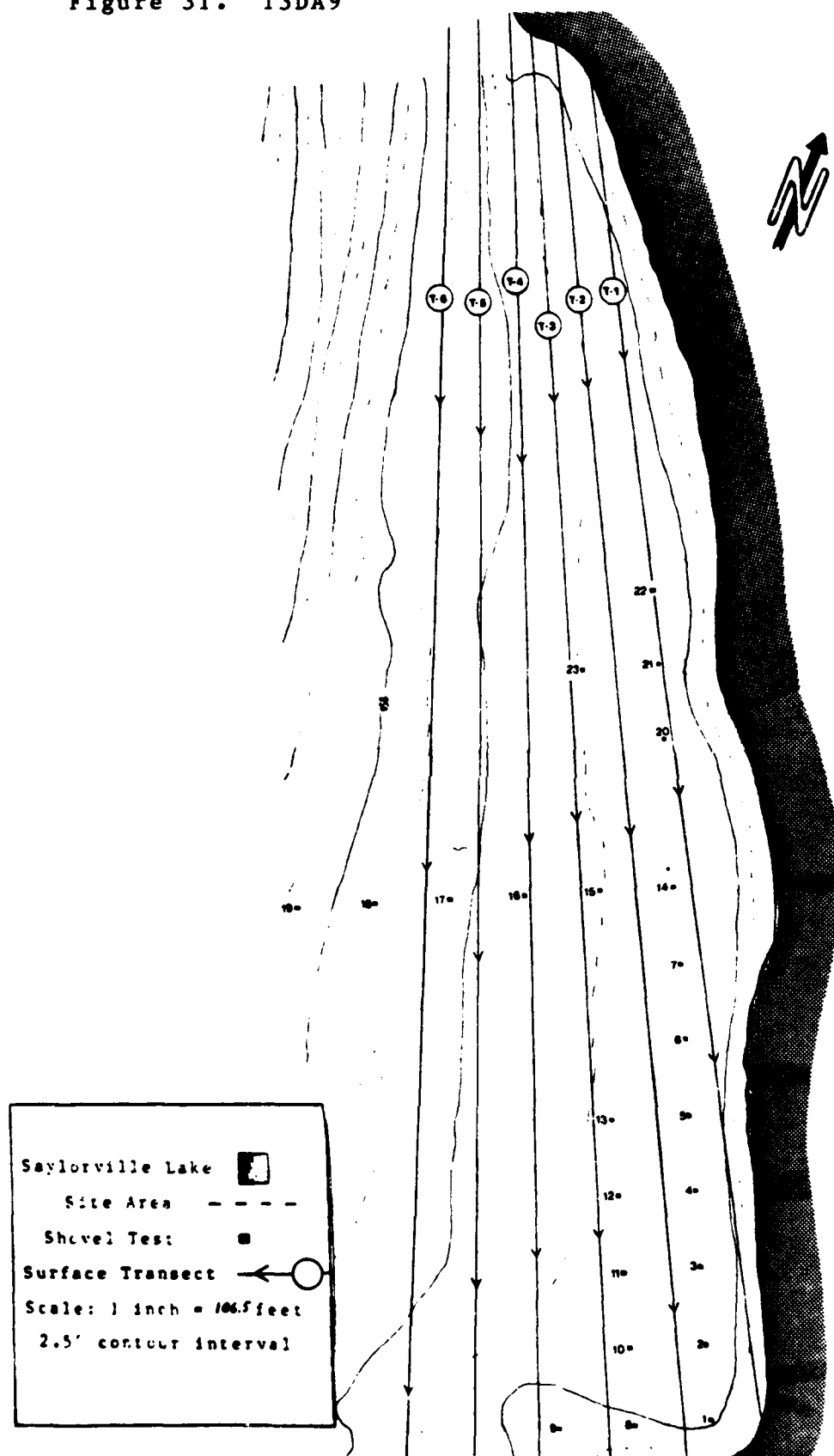
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Figure 31. 13DA9



Adapted from USACE 5-foot contour interval topographic maps

Material Recovered: Surface
 2 core fragments
 3 secondary flakes
 1 scraper
 5 body sherds, cr
 1 rim sherd
 1 body sherd, smooth
 1 groundstone tool

Shovel Test #17
 10-20 cm 1 retouch flake

Shovel Test #23
 0-10 cm 1 primary flake

13DA9 is one of the few sites examined during the present project which had been tested to any great extent prior to 1982. As indicated above, a number of parties have been involved in research endeavors at this site. However, the results of those endeavors have been less than enlightening. Ashworth & McKusick reported that the landowner had a collection of artifacts (of unspecified size and description) which he had found on the surface of a cultivated field just above the river, and that he had at one time uncovered a "fire pit" during plowing. They also stated that, at the time of their visit, the site was "covered with flood silt" (1964:11). The efforts of the Smithsonian River Basin Survey included the excavation of a 5'-square pit in the southwestern portion of the field, which yielded only a few artifacts (River Basin Survey site form, 1966). Further testing by Iowa State University personnel consisted of 38 shovel tests, which also yielded only a few artifacts, the exact proveniences of which were not reported.

Resurvey of 13DA9 during the present project was an attempt to expand upon and clarify the information compiled during previous research at this site. Surface reconnaissance was first conducted along transects running north to south along the entire length of the terrace immediately above Saylorville Lake (see Plate I-28). No cultural materials were recovered during this examination. During planing of the cutbank along the lakeshore, the surface material listed above was found dispersed along almost 50 m of shoreline.

The ceramic sherds found along the cutbank are not all of a common type. Five of the sherds were found within or just adjacent to a washout area on the eastern edge of the terrace. These include two thin, finely-made sherds that appear to be from one vessel: a rim sherd with a crimped lip and a smooth, curved body sherd. The angle of the curve suggests that these sherds came from a very small, globular vessel. Three other sherds were found considerably further south on the cutbank, at the far southeastern corner of the terrace. One of these is badly eroded; the other two are thick, heavily cord-roughened sherds which fit together and apparently had broken apart not long before they were found. The provenience of these ceramics must

be considered suspect, since it did not appear that they had just eroded out of the cutbank. It is assumed that they were deposited by flood waters, and thus cannot necessarily be considered representative of the cultural affiliation of 13DA9 (see Plates II-7, II-16, II-19).

Since a tot. of 66 subsurface tests at this site have yielded, all together, fewer than one dozen artifacts, it appears that there is little more that could be learned from further testing. Its topographic position makes it particularly susceptible to disruption by river meandering and periodic inundation; it may be that successive changes in the position of the river channel have repeatedly truncated the original site area and redistributed the cultural materials once located therein.

13DA160

Location: on the floodplain and a low prairie terrace just above the Des Moines River Valley, now on the west shore of Saylorville Lake, north of the Highway 17 bridge.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 4-14-78.

Testing Methods: surface reconnaissance, 9 shovel tests.

| | |
|---------------------|----------------------|
| Material Recovered: | <u>Surface</u> |
| | 1 secondary flake |
| | 1 neck sherd, cr |
| | 9 body sherds, cr |
| | 1 body sherd, smooth |
| | 1 ceramic crumb |

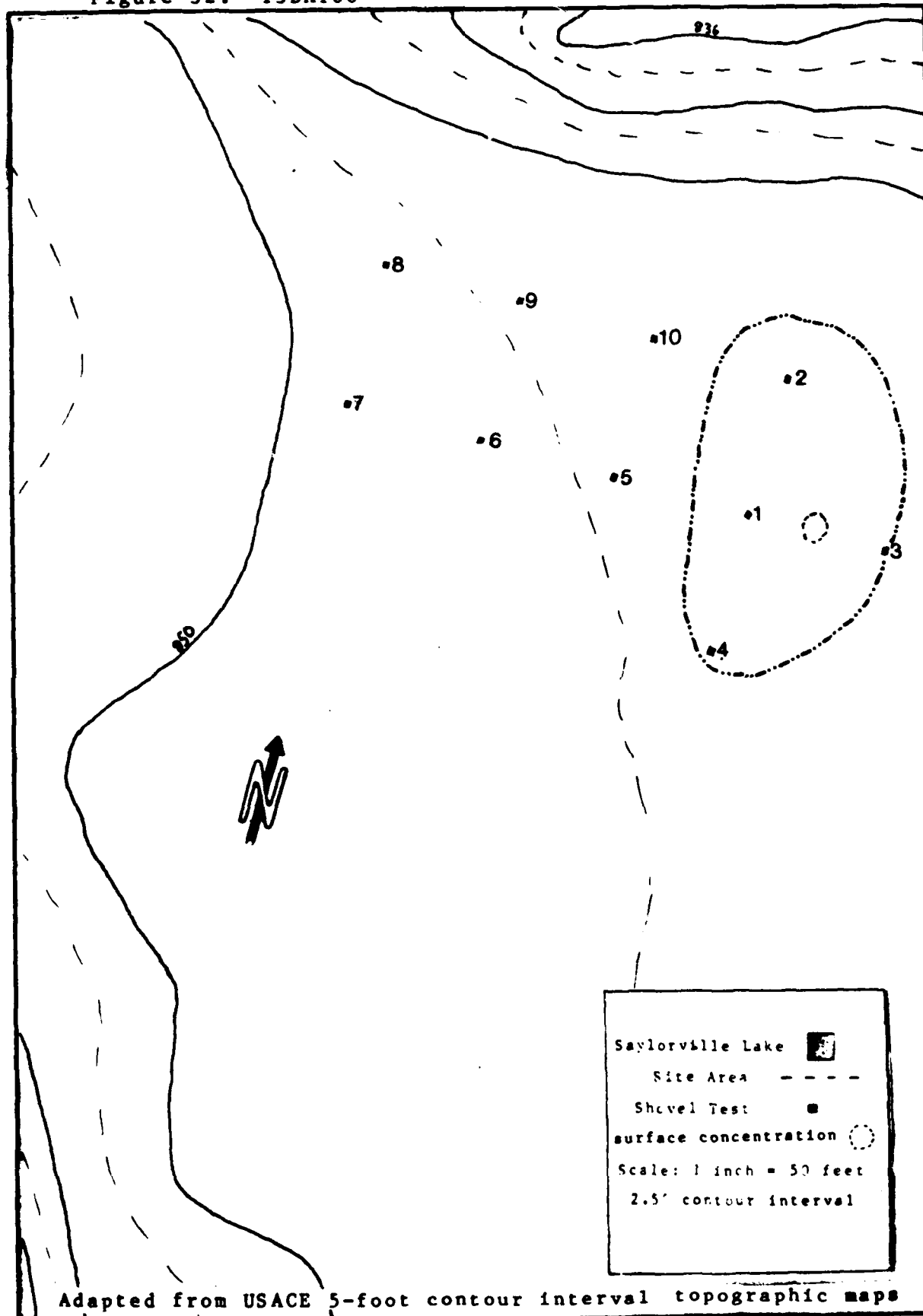
| | |
|----------|-----------------------|
| | <u>Shovel Test #1</u> |
| 10-20 cm | 1 secondary flake |

| | |
|----------|-----------------------|
| | <u>Shovel Test #2</u> |
| 20-30 cm | 1 secondary flake |

The surface material recovered from 13DA160 was found in what could be termed a "suspicious" context. The 12 sherds were all lying within an area no more than 1 meter in diameter, piled on top of one another, in the middle of a long, almost level stretch of defoliated beach which yielded no other surface material (see Plate I-29). It is possible that these sherds were carried to this location by vandals who had been collecting artifacts in the vicinity and then discarding those that they did not wish to keep. (This phenomenon was observed during a previous reservoir survey conducted by Impact Services - see Roetzal, et. al. 1981).

However, since the sherds were found in the general area that was defined by ISU as the location of a site, their presence was used as a starting point for a 15-meter grid of shovel tests.

Figure 32. 13DA160



As indicated above, 9 tests yielded only two pieces of lithic debitage. The soil matrix in all the shovel tests appeared to be rather disturbed; the area is subject to frequent flooding and deposition of sediments.

The sherds found on surface are all similar in physical appearance; the neck sherd is decorated with parallel rows of horizontal cord impressions. The few pieces of lithic debitage found in subsurface testing may represent the last remnants of a site which is very close to total destruction (see Plates II-7 and II-16).

13DA161

Location: on the floodplain and a low prairie terrace just above the Des Moines River Valley, now on the west shore of Saylorville Lake, north of the Highway 17 bridge.

Previous Research: defined by ISU personnel during monitoring of construction activities; no subsurface testing; state site form dated 4-19-78.

Testing Procedures: surface reconnaissance, cutbank planing, 8 shovel tests.

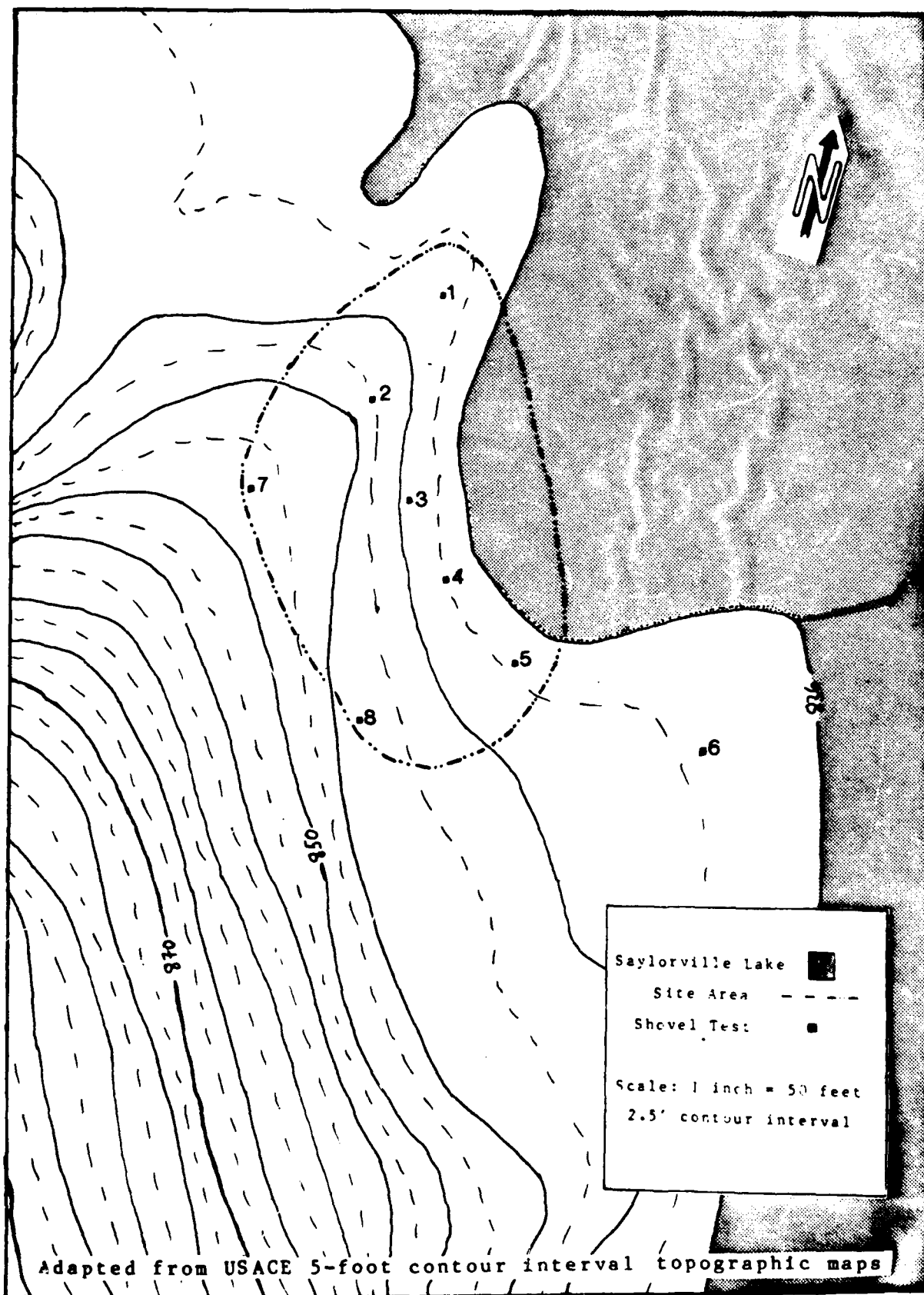
Material Recovered: Surface
 5 core fragments
 7 primary flakes
 26 secondary flakes
 1 preform
 1 projectile point, side-notched
 2 scrapers
 1 knife tip
 1 flake tool
 1 multipurpose tool
 1 rim sherd, cord-impressed
 8 body sherds, cr
 2 body sherds, eroded
 1 cast square nail
 1 glass jar top

Shovel Test #1
20-30 cm 2 bone fragments
30-40 cm 11 " "
40-50 cm 9 " "
50-60 cm 4 " "

Shovel Test #2
10-20 cm 1 core fragment
 2 secondary flakes
20-30 cm 1 " "

Shovel Test #3
0-10 cm 1 secondary flake

Figure 33. 13DA161



Shovel Test #3, cont.

10-20 cm 1 primary flake
20-30 cm 2 secondary flakes

Shovel Test #4

0-10 cm 1 primary flake
10-20 cm 2 secondary flakes

Shovel Test #7

20-30 cm 2 secondary flakes

Shovel Test #8

0-10 cm 1 square nail

13DA161 is situated on a slightly higher landform than the two other Dallas County sites just discussed. It could therefore be expected to have been less subject to disruption by flooding and deposition of sediments. However, it has been quite severely affected by loss of vertical component. The edge of the site area closest to the lake has been cut back in a semi-circular pattern (referred to on the original state site form as a "semi-oxbow"), which has apparently eaten into the main site area (see Plate I-30).

The majority of the surface material listed above was found along this semi-circular cutbank. A few artifacts (including the projectile point) were also found on the northern edge of the site area, on the sideslope above an inlet. Subsurface testing was done just above the cutbank and to either side of it. The soil stratigraphy encountered in most of the shovel tests appeared relatively intact and undisturbed, except in Shovel Test #8, which was very close to the footslope at the western edge of the site area. Here, the soil was very heavy, unconsolidated sediment which was probably deposited by erosion off the footslope.

The rim sherd listed above was found close to this footslope; it is decorated with a series of fine, horizontal cord impressions. It can be classified as Lake Michigan Ware, perhaps an example of the type known as Madison Cord-Impressed. However, the sherd is rather small and somewhat eroded, which makes it difficult to evaluate the exact decorative technique employed. The Late Woodland cultural affiliation indicated by this artifact is, unfortunately, not substantiated by any other materials recovered from the site. The projectile point appears to be either a poorly-made Durst point, which suggests an earlier temporal classification, or possibly a preform (see Plates II-9, II-12, II-13 and II-16).

SECTION III. DATA ANALYSIS

The analytical procedures that were applied to the data recovered during the first phase of this project were essentially limited to descriptive techniques. Because time considerations made it necessary to proceed with intensive testing before the information compiled during survey could be analyzed, most detailed analyses were postponed until they could be applied to the total set of data recovered during both phases of fieldwork. These analyses are discussed in Volume II of this report.

In order to facilitate comparisons among the 27 subject sites, several summary tables will be presented in this section. These tables are a condensed version of the information on artifact assemblages, geomorphic positions and hypothesized cultural affiliations that was presented in the preceding pages. The implications of each set of data in terms of archaeological interpretation are discussed in the following pages.

LITHIC MATERIALS

The terms which were used to describe lithic artifacts during cataloging are explained on pp. 2-3 of Appendix I. These terms, while not universally accepted by any means, do have some utility in studying the mechanical processes involved in the manufacture and utilization of lithic tools. Under ideal conditions, a sample of lithic materials from a particular site should display a distributional pattern reflective of the full range of tool-manufacturing and utilization activities that took place at the site. However, a variety of factors have been at work at Saylorville Lake that must be assumed to have skewed the quantity and range of materials available for recovery at the subject sites. The artifacts recovered from those sites cannot be considered a reliable sample of the entire set of artifacts once contained within the sites. While the presence of bias can be reasonably inferred, the extent of that bias cannot be accurately measured, and thus compensated for, at this time. Therefore, these assemblages should not be used for any extensive examination of cultural activities. For instance, it would be possible to do a chi-square analysis of the distribution of types of lithic debitage in order to delineate significant differences between sites. However, since expected frequencies would have to be based upon an admittedly biased sample, the results of such an analysis would be more a measure of the extent of erosional disturbance at each site than a measure of actual differences in site function.

Despite these problems, it is still possible to make a few very general observations about the lithic materials recovered during survey. Since 13PK259 is probably the least disturbed of all the sites surveyed, one can have somewhat more confidence in

the analysis of material recovered from this site than from most of the others. A large quantity of lithic debitage was recovered here, and the distribution of those artifacts, shown in Figure 34, reflects a rather low proportion of cores (1.1%) and primary flakes (5.8%) in relation to the proportion of secondary (74%) and retouch flakes (14.2%). This suggests that the preliminary stages of tool manufacture were not major activities at this site. There was apparently more emphasis on the reworking and sharpening of existing tools, probably along with the production of flakes for use as cutting and scraping tools. This inference is reinforced especially by the high proportion of retouch flakeage, since these artifacts are more likely to be removed from a site area by water action than are the larger forms of debitage.

A skewed distribution can also be noted at 13PK315: cores comprise 3.8% of total lithics, primary flakes 9.5%, secondary flakes 78.1%, and retouch flakes 3.3%. However, since it is evident that a portion of the site area at 13PK315 was destroyed before this project commenced, the lithic sample recovered here may be seriously biased towards a particular activity.

The distribution of lithic raw material types, shown in Figure 35, also displays some possibly significant patterns. For instance, out of a set of 2,038 pieces of lithic debitage from 27 sites, oolitic cherts were found at only 13 sites, and this material accounts for only 3.7% of the total amount of debitage recovered. Only 11 of these pieces show evidence of thermal pretreatment: 1 from 13PK195, 2 from 13PK242, 1 from 13PK273, 2 from 13PK313 and 5 from 13PK315. While erosional processes do affect the archaeological record in a differential manner, it does not seem likely that there would be a higher incidence of removal of oolitic cherts vs. non-oolitic cherts. Thus, the very low frequency of occurrence of that material in the full set of recovered artifacts probably is a reasonably accurate reflection of the frequency with which it was utilized in tool manufacturing.

Oolitic chert does appear in relative profusion at 13PK315, as does jasper. Because of their flaking properties, these materials would seem to be less desirable for tool-making purposes than the finer-grained cherts and flints. Judging from the evidence collected at other sites, better materials are available in the area. At present, it is unclear if the selection of these coarser materials for use at 13PK315 is a temporally-significant variation or the result of some other factor.

The distribution of raw materials recovered from 13PK259 also exhibits some variation from the average. Flints are present in rather high proportion, as are quartzes and quartzites. Since this site appears to be multi-component, it does hold some potential for examining patterns of lithic source utilization. A controlled study of the vertical distribution of raw material types in undisturbed strata might reveal some

Figure 34. Summary of Lithic Artifacts by Type

| <u>Site</u> | <u>Cores</u> | <u>Primary Flakes</u> | <u>Secondary Flakes</u> | <u>Retouch Flakes</u> | <u>Tools</u> | <u>Total Lithics</u> |
|-------------|--------------|---------------------------|-----------------------------|---------------------------|--------------|--------------------------|
| 13PK163 | - | - | - | - | - | - |
| 13PK194 | - | 5 | - | - | - | 5 |
| 13PK195 | 1 | 1 | 35 | - | 3 | 40 |
| 13PK198 | - | 1 | 2 | - | - | 3 |
| 13PK242 | 4 | 4 | 26 | - | - | 34 |
| 13PK246 | 1 | 7 | 38 | 4 | 2 | 52 |
| 13PK259 | 5 | 26 | 339 | 65 | 23 | 458 |
| 13PK263 | 5 | 6 | 40 | 1 | 1 | 53 |
| 13PK264 | 3 | 4 | 9 | 2 | - | 18 |
| 13PK266 | 2 | 21 | 92 | 7 | 2 | 124 |
| 13PK267 | - | - | - | - | - | - |
| 13PK272 | 2 | 4 | 19 | 2 | 2 | 29 |
| 13PK273 | 6 | 7 | 46 | - | 18 | 77 |
| 13PK274 | 15 | 4 | 44 | - | 6 | 69 |
| 13PK275 | - | 4 | 27 | 2 | 2 | 35 |
| 13PK276 | 5 | 5 | 26 | 5 | 1 | 42 |
| 13PK277 | 5 | - | 6 | - | 1 | 12 |
| 13PK279 | 3 | 1 | 13 | - | 1 | 18 |
| 13PK285 | 1 | 1 | 12 | 1 | 3 | 18 |
| 13PK286 | 2 | 1 | 10 | - | - | 13 |
| 13PK288 | 2 | 5 | 23 | 1 | 4 | 35 |
| 13PK313 | 11 | 19 | 85 | - | 11 | 126 |
| 13PK314 | 16 | 32 | 231 | - | 7 | 286 |
| 13PK315 | 16 | 40 | 329 | 14 | 22 | 421 |
| 13DA9 | 2 | 1 | 3 | 1 | 2 | 9 |
| 13DA160 | - | - | 3 | - | - | 3 |
| 13DA161 | 6 | 9 | 36 | - | 7 | 58 |
| TOTALS | 113 | 208 | 1,494 | 105 | 118 | 2,038 |
| (%) | (5.54) | (10.21) | (73.31) | (5.15) | (5.79) | |

Figure 35. Summary of Lithic Artifacts By Material

| Site | Non-ool. Chert | Ool. Chert | Flint | Jasper | Chal- cedony | Quartz & Quartzite | Other | Total |
|---------|----------------|------------|--------|--------|-----------------|-----------------------|-------|-------|
| 13PK163 | - | - | - | - | - | - | - | - |
| 13PK194 | 5 | - | - | - | - | - | - | 5 |
| 13PK195 | 24 | 1 | 11 | - | 3 | - | 1 | 40 |
| 13PK198 | - | 2 | - | 1 | - | - | - | 3 |
| 13PK242 | 23 | 1 | 3 | 3 | - | 4 | - | 34 |
| 13PK246 | 18 | 1 | 22 | 8 | 1 | 2 | - | 52 |
| 13PK259 | 255 | 1 | 145 | 18 | 7 | 31 | 1 | 458 |
| 13PK263 | 28 | - | 20 | 2 | - | 3 | - | 53 |
| 13PK264 | 8 | - | 9 | - | - | 1 | - | 18 |
| 13PK266 | 66 | 2 | 48 | 1 | 1 | 6 | - | 124 |
| 13PK267 | - | - | - | - | - | - | - | - |
| 13PK272 | 13 | - | 15 | - | - | - | 1 | 29 |
| 13PK273 | 39 | 1 | 27 | 5 | - | 4 | 1 | 77 |
| 13PK274 | 27 | 8 | 24 | 2 | 1 | - | 1 | 69 |
| 13PK275 | 24 | - | 5 | 4 | 1 | - | 1 | 35 |
| 13PK276 | 21 | 1 | 15 | - | 2 | - | - | 42 |
| 13PK277 | 9 | - | 3 | - | - | - | - | 12 |
| 13PK279 | 11 | 2 | 5 | - | - | - | - | 18 |
| 13PK285 | 7 | - | 6 | 2 | - | - | 2 | 18 |
| 13PK286 | 7 | - | 5 | - | - | - | 1 | 13 |
| 13PK288 | 16 | - | 10 | 7 | - | 2 | - | 35 |
| 13PK313 | 76 | 8 | 28 | 9 | - | 5 | - | 126 |
| 13PK314 | 180 | 5 | 65 | 5 | 11 | 16 | 4 | 286 |
| 13PK315 | 236 | 43 | 72 | 57 | 6 | 6 | 1 | 421 |
| 13DA9 | 4 | - | 2 | 1 | 1 | - | 1 | 9 |
| 13DA160 | 3 | - | - | - | - | - | - | 3 |
| 13DA161 | 29 | - | 19 | 3 | 6 | 1 | - | 58 |
| TOTALS | 1129 | 76 | 559 | 128 | 40 | 91 | 15 | 2038 |
| (%) | (55.4) | (3.7) | (27.4) | (6.3) | (1.9) | (4.3) | (.74) | |

variations in those patterns over time.

CERAMIC MATERIALS

As preceding discussions have emphasized, the effects of reservoir processes on ceramics are quite drastic. Those effects were so much in evidence during fieldwork that the discovery of a sherd only moderately eroded became an event upon which to comment. The erosion of exterior and interior surfaces, and the accumulation of chemical precipitates on sherds served to tremendously complicate the already difficult task of ceramic classification. Many of the rim sherds recovered during fieldwork cannot be described in detail because it is no longer possible to positively identify the tools and techniques used to decorate those sherds.

In Figure 36, a summary of the ceramic decorative motifs represented among sherds recovered during resurvey is presented. This table includes only those sherds that were well-preserved enough to allow for a reasonably reliable evaluation of the decorative techniques employed. In the case of sherds with smooth exterior surfaces, it was sometimes very difficult to determine if the sherd had been deliberately smoothed during manufacture or if the present exterior surface has been created by erosion. (These instances are indicated by question marks.)

The range of decorative motifs represented here may be as much the result of the physical attributes of ceramic artifacts as it is the result of the temporal distribution of the subject sites. Paste composition, firing temperature and other specifics of manufacturing techniques all affect the susceptibility of a particular type of ceramic material to degradation by erosion. The cycle of wet and dry conditions that occurs at reservoir shoreline sites is a particularly damaging circumstance for many of the more friable types of ceramics. Thus, certain wares may be poorly represented in the sample simply because they are much more likely to have been destroyed or degraded beyond analysis.

(Note: Historic and organic materials are discussed in Volume II of this report.)

Figure 36. Summary of Ceramic Decoration Techniques

| <u>Decorative Motif</u> | <u>Site</u> |
|--------------------------------|---|
| vertical cord-roughening: | 13PK152 13PK264 13PK266 13PK272 13PK314 13DA9 13DA160 |
| horizontal cord-roughening: | 13PK285 |
| bossing: | 13PK259 13PK263 13PK274 13PK285 |
| cord impressions - horizontal: | 13PK194 13PK259 13PK264 13PK272 13PK314 13DA161 |
| cord impressions - diagonal: | 13PK314 |
| incising | 13PK277 |
| trailing | 13PK264 |
| notching/crimping of lip: | 13PK259 13PK314 13DA9 13DA161 |
| interior tool impressions: | 13PK266 |
| smoothed exterior surface: | 13PK259? 13PK263? 13PK285 13PK314? 13DA9 |

SECTION IV. CONCLUSIONS

The final step in analysis of the data presented in the preceding sections of this report requires a return to the basic objectives of the project: definition of cultural affiliations, site functions and current conditions. In the light of these goals, the results of the project were somewhat mixed. It was not possible to clearly define the temporal and functional specifics of all of the subject sites. The resurvey process did, however, yield some information that may profitably be applied to the examination of the range of archaeological resources present within the Saylorville Project Area.

Figure 37 summarizes hypothesized cultural affiliations and functions for the 27 subject sites, based on the information found in Section II. It also indicates the geomorphic position of each site according to the landform model generated during fieldwork. The tentative nature of these classifications must be emphasized: they are based on evidence which is, as has been discussed, certainly biased to some degree.

No clear pattern of settlement location vis-a-vis cultural affiliation is apparent from this chart; sites covering a wide temporal range were found on each of the defined landforms. The intent of this project was never to examine a formally-defined sample of the archaeological resources of the project area, however. The subject sites were chosen for resurvey on the basis of circumstances relating much more to present-day human activities than factors relevant to prehistoric behavior. The results of this project would have to be combined with information derived from other studies at Saylorville Lake in order to properly address questions of regional settlement patterning.

The definition of site function was by far the most difficult part of the classification process. While cultural affiliation can be assigned on the basis of a few artifacts, a proper definition of site function should be based on examination of the complete span of activities that took place at a particular site. Since so many of the subject sites are now actually only portions of the original site areas, it was not possible in many cases to reconstruct that full range of activities.

The final characteristic to be defined for each of these sites was the current physical condition of the site. Figure 38 summarizes the conclusions that were reached in this regard. The categories used here were derived from the discussion of reservoir processes found in Section II of this volume. Two of those categories are not specified: it is assumed that redeposition of cultural materials has occurred at every site, since that condition actually is the result of the other

Figure 37. Summary of Landform Position, Cultural Affiliation and Site Function

| <u>Site</u> | <u>Landform Position</u> | <u>Cultural Affiliation</u> | <u>Site Function</u> |
|-------------|--------------------------|---|---------------------------|
| 13PK163 | floodplain | Middle Woodland | short-term camp |
| 13PK194 | upland ridge | Late Woodland | indeterminate |
| 13PK195 | low terrace | Late Woodland | indeterminate |
| 13PK198 | upland ridge | 'post-Woodland' | indeterminate |
| 13PK242 | low terrace | Paleo/Archaic | indeterminate |
| 13PK246 | upland ridge | Woodland | indeterminate |
| 13PK259 | intermediate terrace | Paleo/Archaic, Middle Woodland, Late Woodland | resource procurement base |
| 13PK263 | floodplain | Early/Middle Woodland | indeterminate |
| 13PK264 | floodplain | Late Woodland/Mississippian | habitation |
| 13PK266 | low terrace | Woodland | indeterminate |
| 13PK267 | upland ridge | indeterminate | indeterminate |
| 13PK272 | alluvial fan | Late Woodland | indeterminate |
| 13PK273 | alluvial fan | Late Archaic, early Middle Woodland | indeterminate |
| 13PK274 | alluvial fan | Middle Woodland | habitation |
| 13PK275 | low terrace | Early Woodland | indeterminate |
| 13PK276 | alluvial fan | indeterminate | lithic workshop |
| 13PK277 | floodplain | early Middle Woodland | indeterminate |
| 13PK279 | alluvial fan | indeterminate | indeterminate |
| 13PK285 | upland ridge | Middle Woodland | indeterminate |
| 13PK286 | upland ridge | indeterminate | indeterminate |
| 13PK288 | low terrace | Early/Middle Woodland | habitation |
| 13PK313 | alluvial fan | Archaic, Late Woodland/Mississippian | habitation |
| 13PK314 | alluvial fan | Late Woodland | habitation |
| 13PK315 | alluvial fan | Early/Middle Woodland | indeterminate |
| 13DA9 | floodplain | Woodland | habitation |
| 13DA160 | floodplain/low terrace | Late Woodland | indeterminate |
| 13DA161 | floodplain/low terrace | Late Woodland | indeterminate |

Figure 38. Summary of Current Site Conditions

| <u>Condition/Action</u> | <u>Sites Affected</u> |
|--------------------------------------|--|
| Partial inundation: | 13PK264, 13PK272, 13PK273, 13PK277, 13PK313, 13PK314. |
| Loss of vertical component: | 13PK194, 13PK195, 13PK263, 13PK266, 13PK267, 13PK274, 13PK276, 13PK285, 13PK286, 13PK288, 13PK315, 13DA9, 13DA161. |
| Loss of horizontal component: | 13PK272, 13PK273, 13PK313, 13PK314, 13DA160. |
| Aggradation: | 13PK259, 13PK264, 13PK277, 13PK288, 13DA9, 13DA160, 13DA161. |
| Inaccessible/Destroyed/Non-existent: | 13PK163, 13PK194, 13PK242, 13PK263, 13PK267, 13PK279, 13PK313, 13DA9. |

erosional factors listed. Also, even though it is not possible to prove or disprove, there is a good probability that vandalism has affected every site to some degree. It may be noted that some sites listed as destroyed are also included in other categories. This was done as a means of explaining the specific factors that contributed to the destruction of those sites.

Overall, loss of vertical component due to bank slumpage has had the most severe effect on these sites. This is probably the greatest threat to archaeological resources in reservoir areas, since it can affect sites that appear to be protected because they are located some distance above the waterline. In flood-control reservoirs, the nature of which require that water levels be allowed to fluctuate, bank slumpage proceeds so rapidly that sites located on high ground can be destroyed within a few years. Since such sites are not in immediate danger of inundation, they may be overlooked during evaluation and mitigation projects which are carried out on tight schedules and with limited budgets.

Other processes which degrade the archaeological record tend to do so in a less drastic manner. Erosion of topsoil, for instance, is a condition with which most archaeologists are familiar, even if they have not worked in reservoir areas. While bank slumpage entirely destroys sites or sections thereof, thus precluding any possibility of reconstructing the original configuration of the site, sheet erosion will often create lag deposits which retain some evidence of intra-site patterning. The interpretation of such deposits is difficult, of course, but not impossible if properly approached. Similarly, partial inundation and aggradation are conditions which do not necessarily have an irreversible effect on archaeological resources. They do create difficulties relating to the recovery of data at a specific point in time, and thus are of primary concern in choosing appropriate field procedures.

SECTION V. RECOMMENDATIONS

As explained in the introduction to this volume, time was a major consideration in the completion of this project. Because of the impending pool-level increase at Saylorville Lake, it was imperative that as much field investigation as possible be done during the fall of 1982. This required that the second stage of the project commence very soon after the preliminary fieldwork was completed. Therefore, an abbreviated version of the standard review process was employed as a time-saving measure.

As soon as resurvey of the 27 subject sites was completed, a summary of results was presented to representatives of the Corps of Engineers and the State Historic Preservation Office. That information was then reviewed and discussed on a site-by-site basis. The choice of sites for additional testing was done primarily through a process of elimination. Sites which appeared to be in imminent danger of destruction were given a higher priority than those that will not be immediately affected by the pool-level increase. Within that set of endangered sites, each was considered eligible for further testing unless it could be reasonably demonstrated that the nature and present condition of the site did not warrant such treatment.

When the review process was completed, 9 out of the original 27 sites had been selected for further testing: 13PK259, 13PK264, 13PK266, 13PK272, 13PK273, 13PK274, 13PK276, 13PK314 and 13PK315. The data recovered from these sites during resurvey were then reviewed once again, so that appropriate field and analytical procedures could be chosen. Those procedures and the results of this second stage of the project are presented in Volume II of this report.

Plate I-1. Just north of 13PK163, looking east.



Plate I-2. Shovel testing at 13PK194, looking east.



Plate I-3. Terrace remnant at 13PK195, looking northeast.



Plate I-4. Shovel testing at 13PK195, looking west.



Plate I-5. Cutbank at 13PK198, looking west.



Plate I-6. 13PK242, looking southeast.



Plate I-7. 13PK246, looking northeast.



Plate I-8. Deposition at 13PK246.



Plate I-9. 13PK259, looking east (flags indicate surface artifact locations).

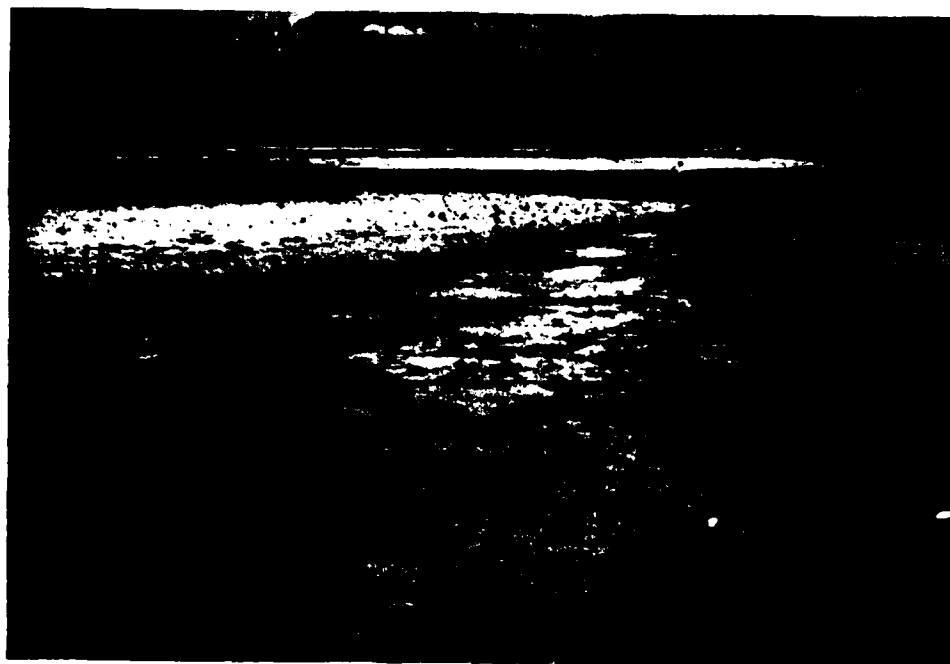


Plate I-10. 13PK263, looking west.



Plate I-11. Surface collecting at 13PK264, looking south.



Plate I-12. Material retrieved from water at 13PK264.

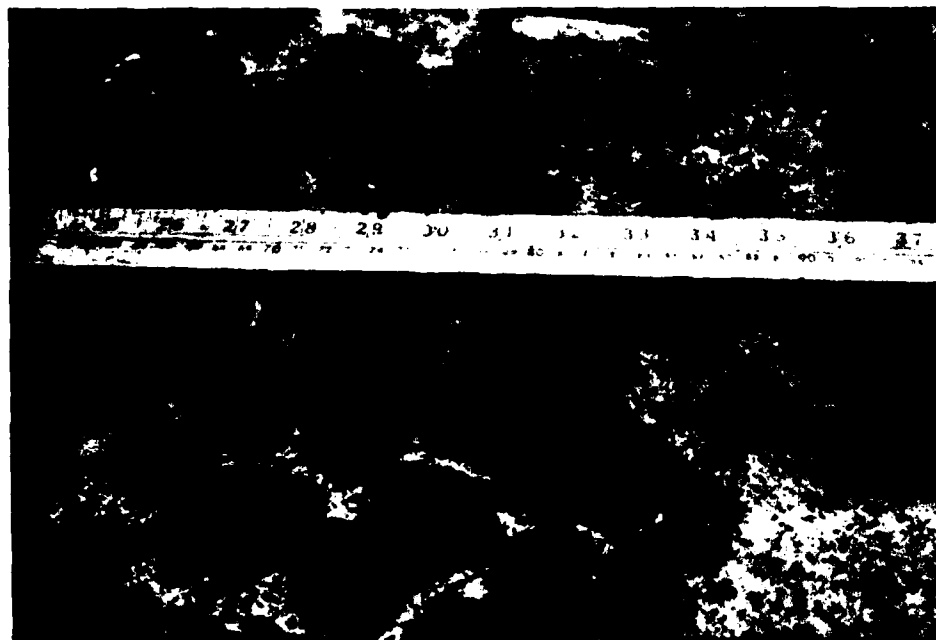


Plate I-13. Cutbank at 13PK266, looking southeast (flags indicate surface artifact locations).



Plate I-14. Bank slumpage at 13PK267, looking northwest.

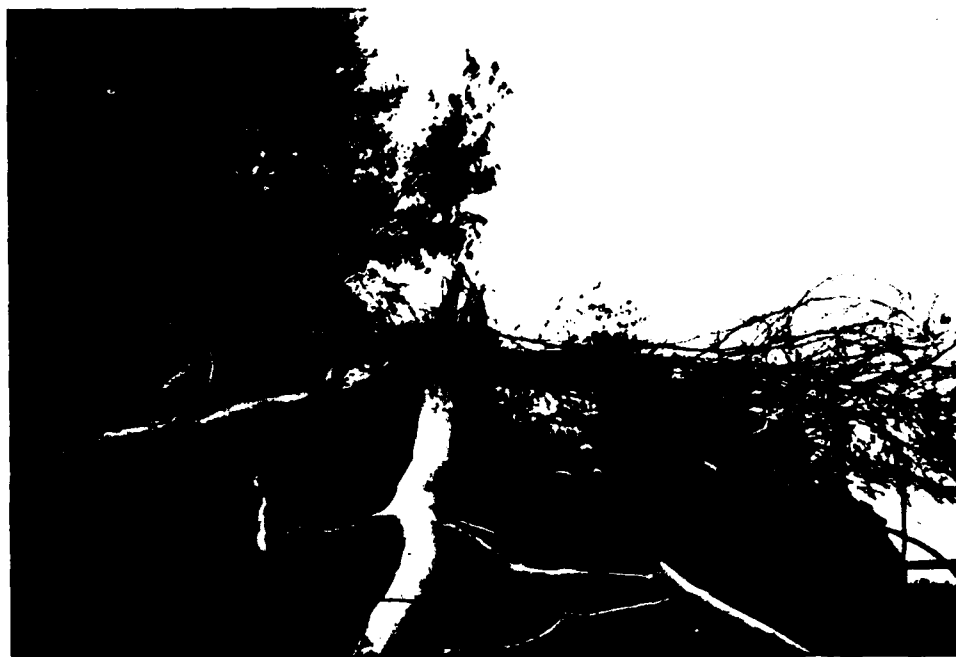


Plate I-15. 13PK272, looking east (flags indicate surface artifact locations).



Plate I-16. 13PK273, looking east (flags indicate surface artifact locations).



Plate I-17. 13PK274, looking west.



Plate I-18. 13PK275, looking southeast (13PK280 is shown on right side of photograph).



Plate I-19. Bank slumped at 13PK276, looking southwest.

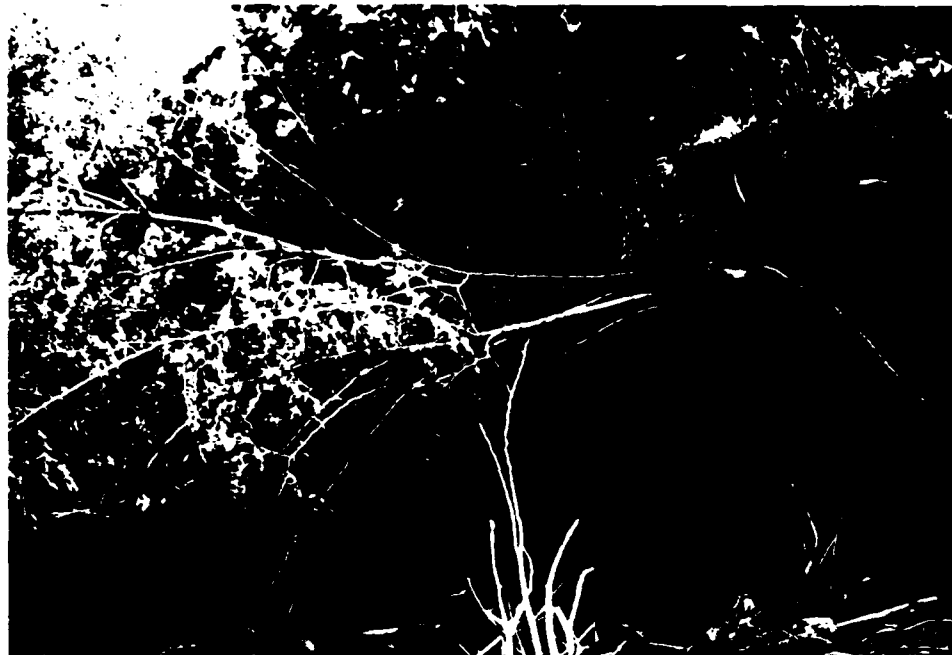


Plate I-20. 13PK277, looking northwest.



Plate I-21. 13PH279, looking south.



Plate I-22. Eastern edge of 13PH285, looking south (flags indicate surface artifact locations).



Plate I-23. 13PK286, looking southeast.



Plate I-24. 13PK288, looking south.



Plate I-25. South end of 13PH313, looking southeast.



Plate I-26. South end of 13PH314, looking northwest (flags indicate surface artifact locations).



Plate 1-27. South edge of 13M515, looking east.

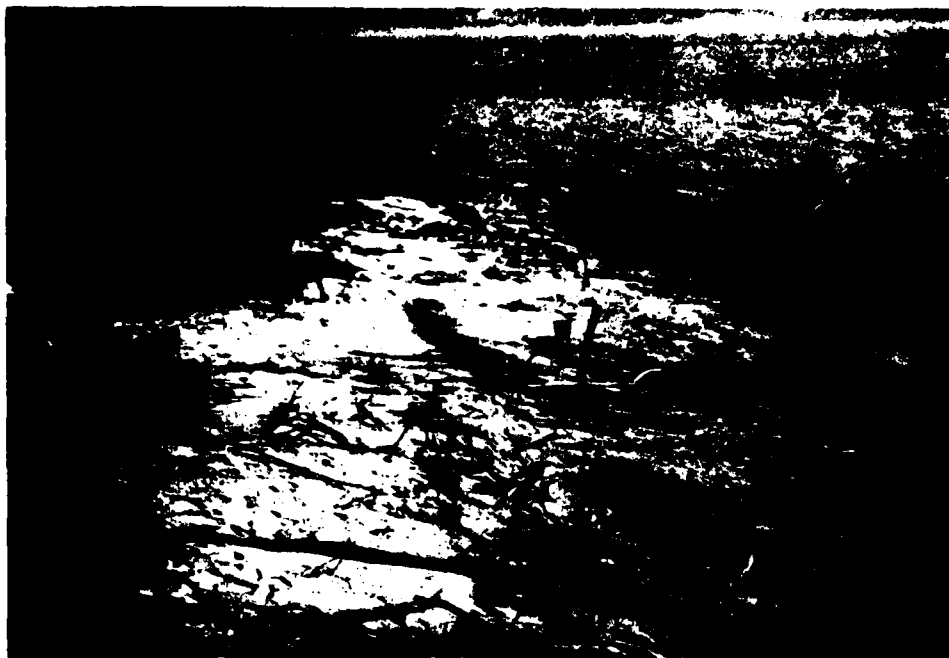


Plate 1-28. 13DA9, looking north

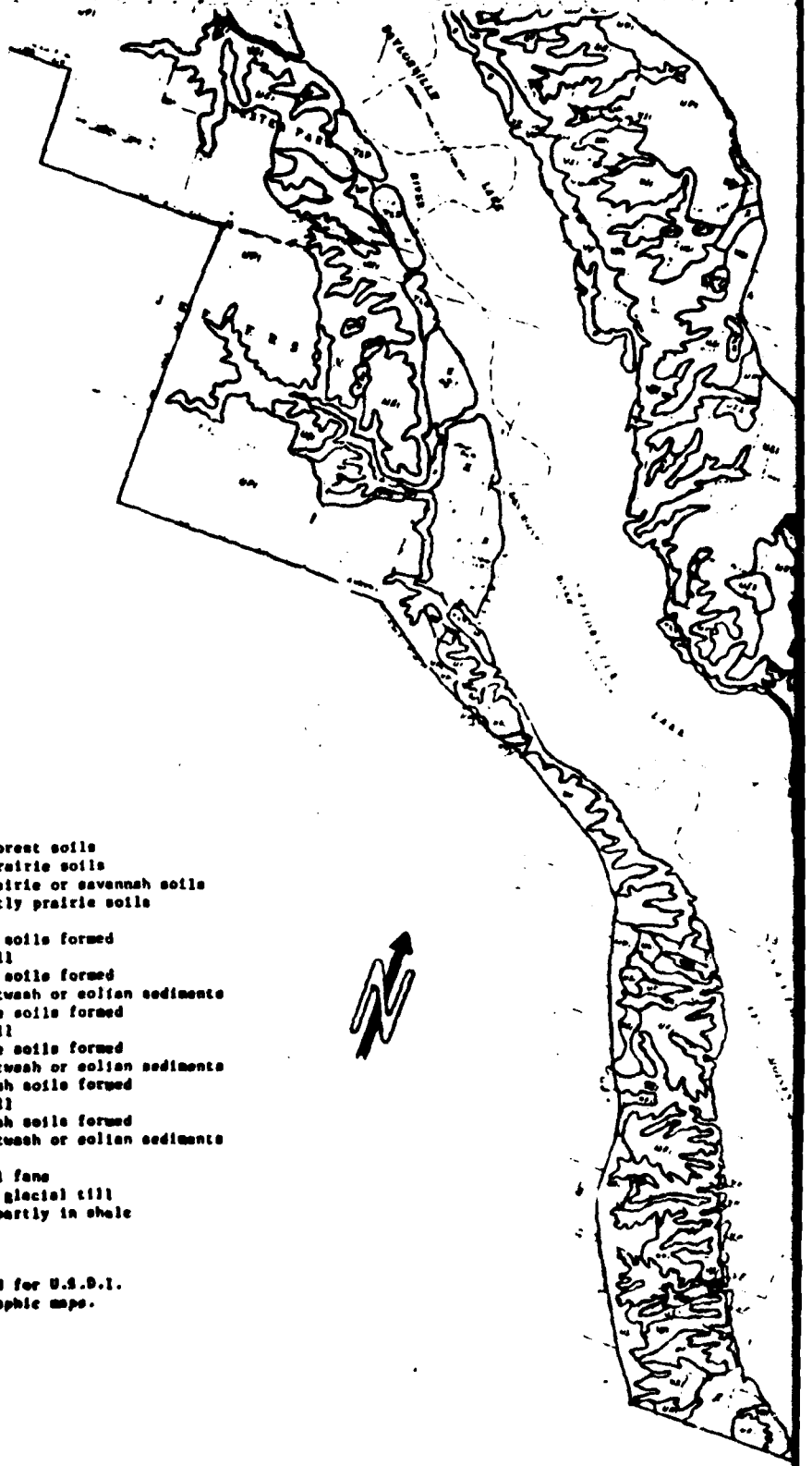


Plate I-29. 13DA160, looking south (flags in background indicate location of surface concentration).



Plate I-30. 13DA161, looking east (flags indicate surface artifact locations).



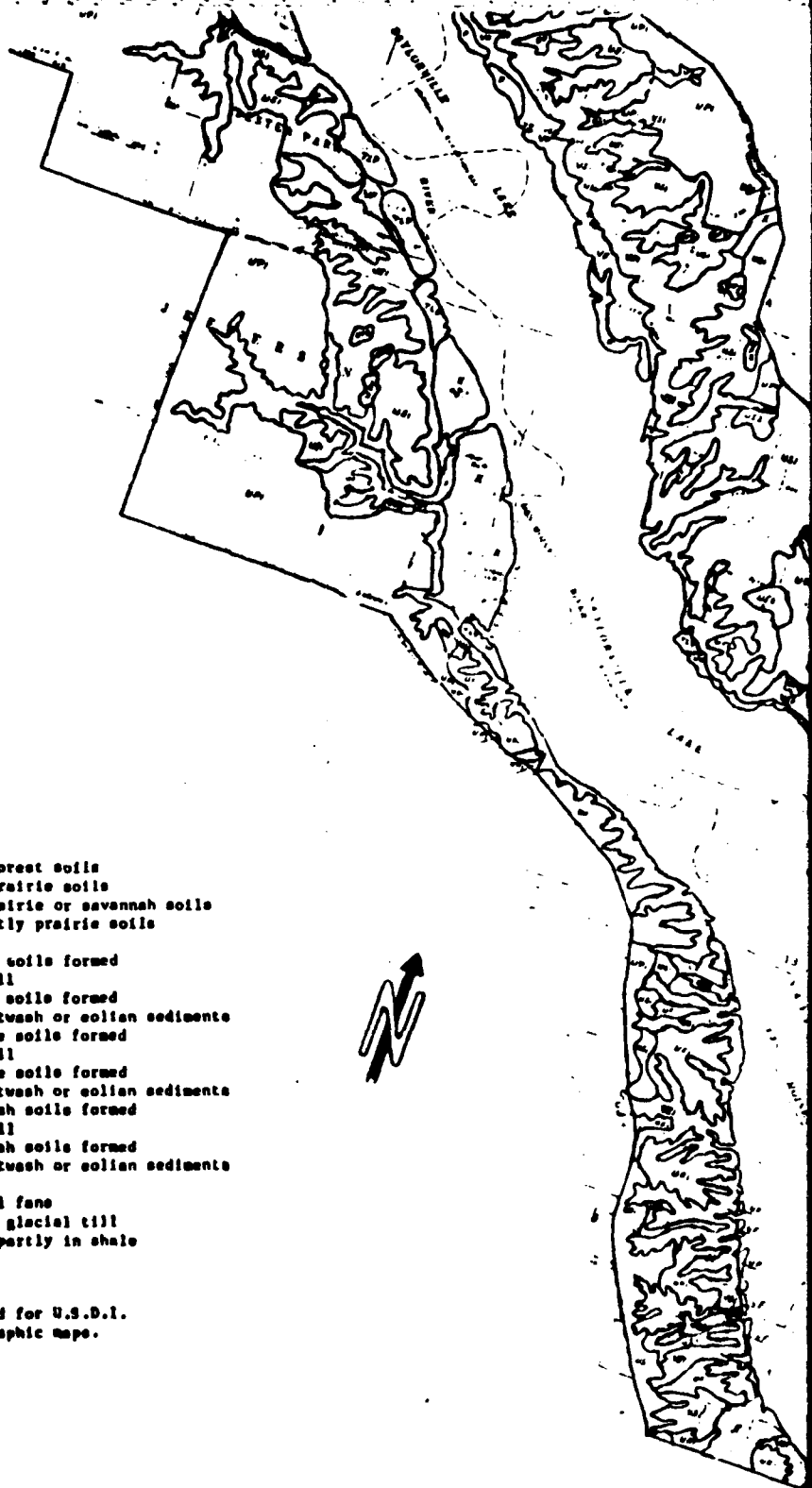


| <u>Map symbol</u> | <u>Landform Type</u> |
|-------------------|--|
| F | Floodplains |
| TMF | High terrace, mostly forest soils |
| THP | High terrace, mostly prairie soils |
| TLP | Low terrace, mostly prairie or savannah soils |
| TSP | Big Creek terrace, mostly prairie soils |
| UF1 | Uplands, mostly forest soils formed in glacial till |
| UF2 | Uplands, mostly forest soils formed in glacial outwash or collian sediments |
| UP1 | Uplands, mostly prairie soils formed in glacial till |
| UP2 | Uplands, mostly prairie soils formed in glacial outwash or collian sediments |
| US1 | Uplands, mostly savannah soils formed in glacial till |
| US2 | Uplands, mostly savannah soils formed in glacial outwash or collian sediments |
| VF | Footlopes and alluvial fans |
| VS1 | Soils formed mostly in glacial till |
| VS2 | Soils formed at least partly in shale |
| X | Altered lands |

Other symbols - refer to standard legend for U.S.G.I.
Geological Survey 7.5 minute topographic maps.

Figure 3. Landform Map of Saylorville Project Area





| <u>Map symbol</u> | <u>Landform Type</u> |
|-------------------|---|
| F | Floodplains |
| TMF | High terrace, mostly forest soils |
| TMP | High terrace, mostly prairie soils |
| TLP | Low terrace, mostly prairie or savannah soils |
| TBP | Big Creek terrace, mostly prairie soils |
| UF1 | Uplands, mostly forest soils formed in glacial till |
| UF2 | Uplands, mostly forest soils formed in glacial outwash or eolian sediments |
| UP1 | Uplands, mostly prairie soils formed in glacial till |
| UP2 | Uplands, mostly prairie soils formed in glacial outwash or eolian sediments |
| US1 | Uplands, mostly savannah soils formed in glacial till |
| US2 | Uplands, mostly savannah soils formed in glacial outwash or eolian sediments |
| VF | Footslopes and alluvial fans |
| VS1 | Soils formed mostly in glacial till |
| VS2 | Soils formed at least partly in shale |
| X | Altered lands |

Other symbols - refer to standard legend for U.S.D.I.
Geological Survey 7.5 minute topographic maps.

Form Type

oodplains

gh terrace, mostly forest soils
 gh terrace, mostly prairie soils
 w terrace, mostly prairie or savannah soils
 g Creek terrace, mostly prairie soils

lands, mostly forest soils formed
 in glacial till
 lands, mostly forest soils formed
 in glacial outwash or collian sediments
 lands, mostly prairie soils formed
 in glacial till
 lands, mostly prairie soils formed
 in glacial outwash or collian sediments
 lands, mostly savannah soils formed
 in glacial till
 lands, mostly savannah soils formed
 in glacial outwash or collian sediments

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 ils formed at least partly in shale

tered lands

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 vey 7.5 minute topographic maps.



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